RJCM Vol. 7, No. 3, September-December 2026
e-ISSN 2821-9074
Print-ISSN 2730-2601
RICE Journal of Creative Entrepreneurship and Management, Vol. 7, No.3, pp. 58-73, September-December 2026
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doi:
Received 19.08.26/ Revised 22.10.26/ Accepted 28.10.26

The Lazy Economy Dilemma: How Smart Home Automation Dampens Consumers' Self-Efficacy and Brand Appreciation

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Abstract

The rapid expansion of smart home automation enhances convenience but may unintentionally weaken consumers' perceived capabilities. This study examines the Lazy Economy Dilemma as a convenience capability paradox linking smart home automation usage, automation dependency, perceived effortlessness, consumer self-efficacy, and brand appreciation. An exploratory sequential mixed-methods design combined semi-structured interviews with 30 smart home users and a survey of 600 users in the Bangkok Metropolitan Area. Thematic analysis identified five themes reflecting convenience-oriented adoption, habitual automation reliance, effortlessness, capability erosion, and empowerment-based brand appreciation. Structural equation modeling demonstrated satisfactory fit ($\chi^2/df = 2.179$, CFI = .964, TLI = .957, GFI = .931, RMSEA = .048, SRMR = .041) and supported all seven hypotheses. Lazy Economy increased automation usage and dependency, while automation usage increased effortlessness and dependency. Automation dependency and effortlessness negatively affected consumer self-efficacy, whereas self-efficacy strongly enhanced brand appreciation ($\beta = .726$, $p < .001$). The findings reveal that automation generates convenience while potentially imposing capability costs. The study contributes a convenience–capability perspective and suggests human-centered automation that preserves user competence and control while sustaining brand appreciation.

Keywords: *Lazy Economy; Smart Home Automation; Automation Dependency; Consumer Self-Efficacy; Brand Appreciation*

1. Introduction

Globally, smart home automation has become a prominent manifestation of the convenience-driven economy. The global smart home market was valued at approximately USD 162.27 billion in 2025 and is projected to exceed USD 1.66 trillion by 2035 (Precedence Research, 2025). Thailand reflects this broader trend, with 65.4 million internet users, representing 91.2% of the population, and 51.0 million active social media users in 2025 (DataReportal, 2025). The Bangkok Metropolitan Area provides a relevant setting for examining smart home automation because residents are increasingly exposed to connected appliances, AI voice assistants, and intelligent residential services (Samancioglu et al., 2024).

This expansion reflects the emergence of the Lazy Economy, in which consumers delegate routine activities to intelligent technologies to reduce effort and save time. Although automation can improve convenience and quality of life, extensive delegation may reduce users' active participation and perceived control over tasks previously

performed independently (Buil-Gil et al., 2022; Zhai et al., 2024). Repeated reliance on automated systems may also limit opportunities for direct task accomplishment, raising questions about its implications for consumer self-efficacy. Although previous research has extensively examined technology acceptance, usefulness, trust, privacy, and satisfaction, the psychological consequences of sustained automation dependence remain comparatively underexplored in smart home environments (Marikyan et al., 2023; Samancioglu et al., 2024; Zhai et al., 2024).

These potential consequences may extend to consumers' evaluations of technology brands. Brand Appreciation refers to consumers' positive recognition of a brand's innovation, quality, and contribution to everyday life. When automated systems perform household tasks with minimal user involvement, consumers may experience greater convenience but fewer opportunities to exercise competence and control. Whether diminished self-efficacy is associated with weaker appreciation of smart home brands remains insufficiently understood, leaving an important gap in research on increasingly autonomous home technologies (Marikyan et al., 2023; Samancioglu et al., 2024). To address this gap, the study proposes the Lazy Economy Dilemma framework, which examines how an orientation toward minimizing effort through delegation relates to smart home automation usage and dependency, perceived effortlessness, consumer self-efficacy, and Brand Appreciation. Its novelty lies in integrating these constructs into a proposed convenience–capability mechanism: automation may reduce effort while also limiting opportunities for mastery, with potential consequences for self-efficacy and subsequent brand evaluation. Lazy Economy is therefore conceptualized as an effort-minimizing consumption orientation rather than a synonym for laziness, technology acceptance, or automation use.

Accordingly, this study aims to: (1) examine the proposed relationships among Lazy Economy, Smart Home Automation Usage, Automation Dependency, Perceived Effortlessness, Consumer Self-Efficacy, and Brand Appreciation; and (2) explore consumers' experiences of smart home automation to explain the convenience–capability dilemma, particularly how automation dependency and perceived effortlessness relate to self-efficacy and how self-efficacy shapes Brand Appreciation. An exploratory sequential mixed-methods design integrates qualitative insights with quantitative findings to investigate these relationships among smart home users in the Bangkok Metropolitan Area.

2. Literature Review

To distinguish the constructs analytically, Lazy Economy (LE) refers to consumers' preference for minimizing effort through delegation; Smart Home Automation Usage (SHA) represents the use of automated home functions; Automation Dependency (AD) captures reliance on these functions; and Perceived Effortlessness (PE) reflects the perceived reduction in effort during household management. Consumer Self-Efficacy (SE) refers to consumers' beliefs in their ability to perform relevant tasks, whereas Brand Appreciation (BA) represents their recognition of a brand's value, quality, innovation, and contribution to daily life. BA is distinguished from satisfaction, loyalty, and purchase intention.

The proposed Lazy Economy Dilemma integrates Self-Determination Theory (SDT), Cognitive Load Theory (CLT), and Social Cognitive Theory (SCT). SDT explains consumers' motivation to adopt effort-saving technologies, while CLT explains how automation can reduce the cognitive demands of routine household activities and increase perceived effortlessness (Ryan & Deci, 2020; Sweller et al., 2019). SCT explains the potential capability-related consequences of sustained delegation: fewer opportunities for mastery experiences may weaken self-efficacy, which may subsequently shape brand evaluations (Bandura, 2001). These theories therefore address distinct stages of the proposed framework rather than providing interchangeable explanations.

Clarification of the complementary roles of SDT, CLT, and SCT

The three theories serve complementary rather than interchangeable roles in the proposed model. Self-Determination Theory (SDT) explains consumers' motivation to adopt effort-saving technologies, supporting the proposed positive relationships of Lazy Economy with Smart Home Automation Usage and Automation Dependency. Cognitive Load Theory (CLT) explains how smart-home automation simplifies routine household activities by reducing the mental effort required for monitoring, decision-making, and task coordination. This perspective supports the relationship between Smart Home Automation Usage and Perceived Effortlessness. Social Cognitive Theory (SCT) explains the potential consequences of sustained automation reliance, as reduced opportunities to perform tasks independently may limit mastery experiences and weaken Consumer Self-Efficacy, which subsequently influences Brand Appreciation. Importantly, reduced cognitive load is not inherently harmful; the potential negative consequences arise when convenience involves persistent delegation and diminished active engagement. Together, these theories provide a sequential explanation of consumers' motivation, perceived effort reduction, and potential capability-related outcomes, establishing a clear theoretical foundation for the proposed model.

2.1 Relationship between Lazy Economy (LE) and Smart Home Automation Usage (SHA)

Consumers with stronger Lazy Economy orientations are more likely to favor technologies that minimize effort and automate routine household activities. Smart home systems support this preference by enabling convenient management of household functions with limited manual intervention. Consistent with SDT, technologies that reduce effort and support consumers' preferences may be more attractive to individuals seeking convenience (Ryan & Deci, 2020; Samancioglu et al., 2024; Park & Han, 2025). Accordingly, the following hypothesis is proposed.

H1: Lazy Economy positively influences Smart Home Automation Usage

2.2 Relationship between Lazy Economy (LE) and Automation Dependency (AD)

A preference for minimizing effort may encourage consumers to delegate routine decisions and household tasks to intelligent systems. Repeated reliance may gradually establish habitual dependence as automated operation becomes the preferred alternative to manual control. Research on technology use and IoT-based home systems provides context for examining this relationship (Deursen et al., 2025; Stolojescu-Crișan et al., 2021). Therefore, the following hypothesis is proposed.

H2: Lazy Economy positively influences Automation Dependency

2.3 Relationship between Smart Home Automation Usage (SHA) and Perceived Effortlessness (PE)

Cognitive Load Theory (CLT), suggests that simplifying routine activities can reduce the cognitive resources required to complete them (Sweller et al., 2019). By automating household functions and reducing manual intervention, smart home systems may make household management feel less effortful. Previous studies have also examined the convenience and ease associated with smart home technologies (Zhou et al., 2024; Daruwala, 2025). Accordingly, the following hypothesis is proposed.

H3: Smart Home Automation Usage positively influences Perceived Effortlessness

2.4 Relationship between Smart Home Automation Usage (SHA) and Automation Dependency (AD)

Repeated use of smart home automation may strengthen consumers' reliance on automated systems by making technology-mediated task completion a routine part of household management. As users increasingly allow smart devices to perform activities

that they previously managed themselves, automation may become the preferred mode of operation and reduce the likelihood of returning to manual control. Research on responsible smart-home technology adoption and IoT-based home automation provides context for understanding how continued use can foster reliance on automated functions (Li et al., 2025; Stolojescu-Crișan et al., 2021).

H4: Smart Home Automation Usage positively influences Automation Dependency

2.5 Relationship between Automation Dependency (AD) and Consumer Self-efficacy (SE)

From a Social Cognitive Theory (SCT) perspective, individuals' confidence in their capabilities may be influenced by the extent to which they independently engage in and perform everyday tasks. Increasing dependence on smart home automation may reduce consumers' opportunities to practice skills, make independent decisions, and manage household activities without technological assistance. As automated systems increasingly replace direct user involvement, consumers may become less confident in their ability to perform these activities independently. Previous research has highlighted the importance of maintaining user skills when interacting with smart devices (Van Deursen et al., 2025). Similarly, research on AI usage has demonstrated that reliance on intelligent technologies may have implications for individuals' perceived self-efficacy (Han et al., 2025).

H5: Automation Dependency negatively influences Consumer Self-Efficacy

2.6 Relationship between Perceived Effortlessness (PE) and Consumer Self-efficacy (SE)

Perceived effortlessness may have different implications depending on whether technology simplifies tasks while preserving user participation or replaces opportunities for independent action. From an SCT perspective, when effortless task completion results from sustained delegation, users may have fewer opportunities to practice skills and develop mastery experiences (Bandura, 2001). The proposed negative relationship therefore concerns perceived effortlessness associated with reduced active participation, rather than implying that convenience inherently undermines self-efficacy. Relevant research provides context for examining this relationship (Zhu et al., 2026; Zhang et al., 2024).

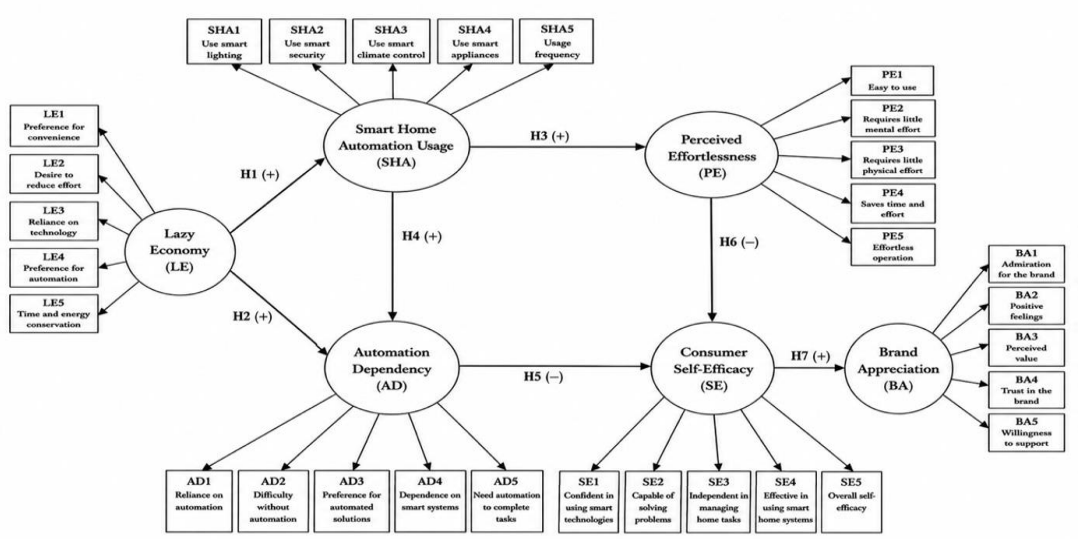
H6: Perceived Effortlessness negatively influences Consumer Self-Efficacy

2.7 Relationship between Consumer Self-efficacy (SE) and Brand Appreciation (BA)

Consumers who feel capable of using and managing technology may be better positioned to recognize its value and evaluate its associated brands favorably. SCT provides a theoretical basis for understanding how capability beliefs relate to individuals' engagement with their environment (Bandura, 2001). Research on consumer self-efficacy and brand identification also provides relevant evidence concerning the association between self-efficacy and positive brand-related evaluations (Pasha et al., 2023; Koskie et al., 2024).

H7: Consumer Self-Efficacy positively influences Brand Appreciation

Figure 1 Conceptual framework



3. Methodology

This study employed an exploratory sequential mixed-methods design comprising two studies. Study 1 explored how smart home users experienced convenience, reliance on automation, reduced effort, personal capability, and brand evaluation in everyday household settings. The resulting five themes convenience-oriented adoption, habitual automation reliance, effortlessness and delegated household management, capability erosion and reduced self-efficacy, and empowerment-based brand appreciation were used to contextualize the proposed relationships and inform the development of the Study 2 questionnaire. Specifically, the qualitative findings helped refine the wording and contextual relevance of the measures concerning automation dependency, perceived effortlessness, consumer self-efficacy, and brand appreciation, while the theoretically informed framework guided the relationships subsequently tested. Study 2 then examined the relationships among Lazy Economy, Smart Home Automation Usage, Automation Dependency, Perceived Effortlessness, Consumer Self-Efficacy, and Brand Appreciation using Structural Equation Modeling (SEM). The two phases were thus connected through the use of qualitative findings to refine the quantitative instrument and interpret the proposed model in the context of users' lived experiences.

3.1 Study 1: Qualitative Exploration

Study 1 involved 30 consumers aged 18 years and above residing in the Bangkok Metropolitan Area who had used at least one smart home device or automation service within the previous six months. Participants were selected purposively to obtain information-rich accounts from users with recent and relevant experience of smart home automation. Semi-structured interviews focused on the role of convenience in adoption, reliance on automated functions, perceptions of reduced effort, confidence in performing household tasks independently, and evaluations of smart home brands. The same core topics guided each interview, while follow-up questions were used to explore relevant experiences in greater depth. Interviews were documented and transcribed for thematic analysis, and recruitment continued until later interviews no longer yielded substantively new thematic insights.

The interview transcripts were examined through an iterative thematic analysis involving familiarization, initial coding, theme development, review, and refinement. Recurring codes were compared across transcripts and grouped into higher-order patterns

where they captured conceptually related experiences. Provisional themes were repeatedly checked against the interview material to assess their coherence and distinctiveness. An audit trail linking codes, developing themes, and the source transcripts was retained throughout the analysis. This process resulted in five themes convenience-oriented smart home adoption, habitual automation reliance, effortlessness and delegated household management, capability erosion and reduced self-efficacy, and empowerment-based brand appreciation which were used to contextualize the relationships subsequently examined in Study 2.

3.2 Study 2: Quantitative Theory Testing and SEM Validation

Study 2 tested the proposed relationships among Lazy Economy (LE), Smart Home Automation Usage (SHA), Automation Dependency (AD), Perceived Effortlessness (PE), Consumer Self-Efficacy (SE), and Brand Appreciation (BA). The target population comprised consumers aged 18 years and above residing in the Bangkok Metropolitan Area who had used at least one smart home device or automation service during the previous six months. Purposive screening was used to ensure that respondents had relevant experience with smart home technologies before inclusion in the quantitative study.

The required sample size was determined based on the recommendation of at least 20 respondents per observed variable for structural equation modeling (SEM). Because the measurement model comprised 30 observed indicators across six latent constructs, the target sample size was calculated as $30 \times 20 = 600$ respondents. This figure represents the minimum target for the quantitative phase and is unrelated to the number of participants involved in the qualitative phase. Accordingly, 600 valid questionnaires were retained for the final quantitative analysis, providing the basis for estimating the measurement and structural models.

The questionnaire was developed by integrating established measurement scales with the qualitative insights generated in Study 1. All six constructs—Lazy Economy (LE), Smart Home Automation Usage (SHA), Automation Dependency (AD), Perceived Effortlessness (PE), Consumer Self-Efficacy (SE), and Brand Appreciation (BA) were measured using five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement approach distinguished between constructs for which relevant prior scales could be adapted and constructs requiring context-specific item development. Items for SHA, AD, PE, and SE were adapted from established measures in the literature to preserve their theoretical meaning while making their wording appropriate to smart-home use in the Bangkok Metropolitan Area. In contrast, the LE and BA item sets were developed for this study because the study's specific focus on convenience-oriented household delegation and consumers' appreciation of smart-home brands was not fully represented by a single existing scale. Their development was informed by the conceptual framework and the themes identified in Study 1. This distinction between adopted/adapted and newly developed items is reported in Figure 1, together with the corresponding source literature where applicable.

Content validity was assessed by five experts, who evaluated the relevance and alignment of the items with their intended constructs. The resulting Index of Item Objective Congruence (IOC) values ranged from 0.80 to 1.00. A pilot test involving 30 respondents was then conducted to assess the internal consistency of the measures before the main survey. Cronbach's alpha coefficients exceeded the recommended threshold of 0.70, indicating acceptable preliminary reliability (Hair et al., 2022; Nunnally & Bernstein, 1994). The qualitative findings from Study 1 informed the wording and contextual relevance of the newly developed LE and BA items and guided contextual adaptations to the established scales. The specific scale sources and whether each construct was adopted,

adapted, or newly developed should be identified in Table 1; exact item-level citations and individual alpha values should be reported where these records are available.

Data were collected through an online structured questionnaire administered using Google Forms. The questionnaire link was distributed to eligible target respondents who met the study's inclusion criteria. Before completing the questionnaire, respondents were provided with information about the study's objectives, the nature of their participation, and the confidentiality of their responses. Participation was voluntary, and informed consent was obtained before respondents proceeded to the questionnaire. The online format enabled respondents to complete the questionnaire remotely and submit their responses electronically. After the data collection period, the submitted responses were screened for completeness and suitability for analysis. Following this screening process, 600 valid responses were retained for the final quantitative analysis.

The collected data were analyzed using descriptive statistics and Structural Equation Modeling (SEM). The measurement model was evaluated using standardized factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE), whereas discriminant validity was assessed using the Fornell–Larcker criterion (Fornell & Larcker, 1981). The structural model was subsequently employed to test the proposed hypotheses and estimate the direct and indirect effects among the latent constructs. Model fit was evaluated using multiple goodness-of-fit indices, including the chi-square to degrees-of-freedom ratio ($\chi^2/df < 3.00$), Comparative Fit Index (CFI ≥ 0.90), Tucker–Lewis Index (TLI ≥ 0.90), Goodness-of-Fit Index (GFI ≥ 0.90), Root Mean Square Error of Approximation (RMSEA ≤ 0.08), and Standardized Root Mean Square Residual (SRMR ≤ 0.08), following the recommendations of Hair et al. (2022) and Kline (2023).

3.3 Common method bias

Because the quantitative data were collected from the same respondents using a self-administered questionnaire, common method bias (CMB) was assessed using Harman's single-factor test. All 30 measurement items were entered simultaneously into an unrotated exploratory factor analysis. The first unrotated factor accounted for 40.35% of the total variance, below the conventional 50% threshold, indicating that no single factor dominated the covariance among the measures. As an additional diagnostic, the construct-level variance inflation factor (VIF) values reported in Table 1 ranged from 2.08 to 2.52, remaining below the conservative threshold of 3.30. Taken together, the single-factor and collinearity diagnostics suggest that common method bias was unlikely to materially distort the estimated relationships in the structural model.

4. Results and Discussions

4.1 Qualitative Results

The qualitative findings show that consumers experienced smart home automation through a recurring tension between immediate convenience and the longer-term preservation of personal capability and control. Automation was not described as inherently beneficial or harmful; its meaning depended on how far technological assistance replaced users' own involvement in household activities. Five themes captured this tension and provided contextual grounding for the mechanisms examined in the Lazy Economy Dilemma framework.

Theme 1: Convenience-Oriented Smart Home Adoption

Participants commonly described convenience, time saving, and the reduction of routine household burdens as primary reasons for adopting smart home technologies. Automated lighting, security monitoring, appliance control, and voice-assisted functions were valued because they simplified repetitive activities and fitted demanding urban routines. Importantly, convenience was discussed not merely as ease of use but as a broader

preference for delegating low-value or repetitive tasks to technology. This theme contextualizes the Lazy Economy orientation as a behavioral preference for minimizing effort through automation.

Theme 2: Habitual Automation Reliance

A second theme concerned the gradual normalization of reliance on automated systems. Participants described how functions initially adopted as optional conveniences became embedded in everyday routines. Repeated use reduced the need to remember, monitor, or manually perform household tasks, and several accounts suggested that users became increasingly uncomfortable when automation was unavailable. The pattern indicates that frequent smart home use can evolve from voluntary convenience into habitual dependency as consumers come to expect continuous technological assistance.

Theme 3: Effortlessness and Delegated Household Management

Participants repeatedly emphasized that automation made household management feel easier and less cognitively demanding. Routine decisions and physical actions were transferred to connected systems, allowing users to devote less attention to operational details. Although this effort reduction was generally viewed positively, some participants also recognized that constant delegation reduced their direct involvement in tasks they had previously managed themselves. The theme therefore captures Perceived Effortlessness as both an immediate benefit and a potential pathway through which active engagement with household activities declines.

Theme 4: Capability Erosion and Reduced Self-Efficacy

The most consequential concern in the interviews involved perceived capability when automated assistance was removed. Participants who had become accustomed to smart systems described greater difficulty, uncertainty, or lower confidence when they had to complete familiar household activities manually. These accounts did not imply that automation eliminated competence altogether; rather, they suggested that reduced practice and fewer mastery experiences could gradually weaken confidence in independent task performance. This theme provides qualitative context for the negative relationships of Automation Dependency and Perceived Effortlessness with Consumer Self-Efficacy.

Theme 5: Empowerment-Based Brand Appreciation

Brand evaluations were closely tied to whether automation enhanced convenience while preserving a meaningful sense of user control. Participants expressed stronger appreciation for smart home brands that provided clear feedback, accessible manual options, understandable controls, and opportunities to intervene when necessary. Conversely, systems that made users feel excessively dependent were less likely to be regarded as empowering. This theme suggests that Brand Appreciation is strengthened when technological assistance supports, rather than displaces, consumers' sense of competence and agency.

Across the five themes, convenience emerged as the principal attraction of smart home automation, but its benefits were accompanied by concerns about habitual reliance and reduced opportunities for independent action. Participants' accounts therefore portray the Lazy Economy Dilemma as a trade-off between effortless household management and the maintenance of competence and control. These qualitative findings provide contextual grounding for the structural relationships tested in Study 2 rather than serving as a qualitative restatement of the hypothesized model.

4.2 Convergent and Discriminant Validity

Convergent validity was evaluated using Cronbach's alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE). As reported in Table 1, α values ranged from 0.897 to 0.918, CR values from 0.924 to 0.938, and AVE values from 0.709 to 0.753. All values exceeded the recommended thresholds of 0.70 for α and CR and 0.50 for AVE, supporting internal consistency and convergent validity across the six constructs. Discriminant validity

was assessed using the Fornell–Larcker criterion. The square roots of AVE, shown on the diagonal, ranged from 0.842 to 0.868 and were greater than the corresponding inter-construct correlations. The results, therefore support the empirical distinctiveness of Lazy Economy, Smart Home Automation Usage, Automation Dependency, Perceived Effortlessness, Consumer Self-Efficacy, and Brand Appreciation.

Table 1 Reliability, Convergent Validity, Discriminant Validity, and Common Method Bias Assessment

Construct	Mean	SD	α	CR	AVE	VIF	LE	SHA	AD	PE	SE	BA
LE	4.12	0.63	0.903	0.928	0.720	2.11	0.849					
SHA	4.05	0.67	0.914	0.936	0.747	2.36	0.641	0.864				
AD	3.88	0.71	0.897	0.924	0.709	2.52	0.618	0.677	0.842			
PE	4.18	0.59	0.909	0.932	0.732	2.08	0.534	0.692	0.483	0.856		
SE	3.41	0.76	0.918	0.938	0.753	2.47	-0.401	-0.465	-0.652	-0.557	0.868	
BA	3.52	0.73	0.912	0.935	0.744	2.24	-0.285	-0.332	-0.541	-0.437	0.726	0.863

Note. SD = Standard Deviation; α = Cronbach's Alpha; CR = Composite Reliability; AVE = Average Variance Extracted; VIF = Variance Inflation Factor.

4.3 Quantitative Theory Testing and SEM Validation

Following the qualitative contextualization in Study 1, Study 2 evaluated the measurement and structural models for the six constructs using SEM. The analysis first established the adequacy of the measurement model and then tested the seven hypothesized structural relationships linking convenience orientation, automation use, dependency, effortlessness, self-efficacy, and brand appreciation.

The measurement model demonstrated satisfactory psychometric properties. Standardized factor loadings were consistently high across all 30 indicators: 0.821–0.875 for Lazy Economy (LE), 0.832–0.888 for Smart Home Automation Usage (SHA), 0.816–0.872 for Automation Dependency (AD), 0.837–0.883 for Perceived Effortlessness (PE), 0.824–0.891 for Consumer Self-Efficacy (SE), and 0.836–0.885 for Brand Appreciation (BA). Together with the reliability and validity evidence reported in Table 2, these loadings indicate that the observed indicators represented their intended latent constructs adequately.

The structural results supported all seven hypotheses. Lazy Economy positively influenced Smart Home Automation Usage ($\beta = 0.641$, $p < .001$) and Automation Dependency ($\beta = 0.314$, $p < .001$), supporting H1 and H2. Smart Home Automation Usage positively influenced Perceived Effortlessness ($\beta = 0.692$, $p < .001$) and Automation Dependency ($\beta = 0.476$, $p < .001$), supporting H3 and H4. Automation Dependency negatively influenced Consumer Self-Efficacy ($\beta = -0.481$, $p < .001$), while Perceived Effortlessness also had a negative effect on Consumer Self-Efficacy ($\beta = -0.325$, $p < .001$), supporting H5 and H6. Consumer Self-Efficacy, in turn, exerted a strong positive effect on Brand Appreciation ($\beta = 0.726$, $p < .001$), supporting H7.

Overall model fit was satisfactory. The structural model yielded $\chi^2/df = 2.179$, CFI = 0.964, TLI = 0.957, GFI = 0.931, RMSEA = 0.048, and SRMR = 0.041. The χ^2/df ratio was below 3.00, CFI, TLI, and GFI exceeded 0.90, and RMSEA and SRMR were below 0.08. These indices indicate that the proposed model provided an acceptable representation of the observed data and was suitable for hypothesis testing.

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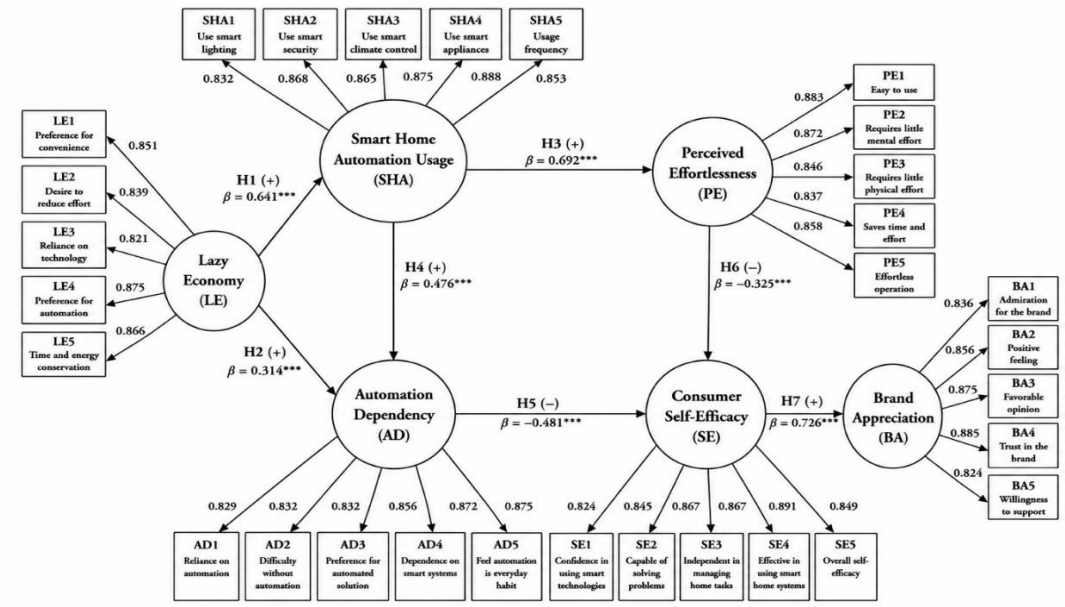
Figure 2 Finalized model



Remark $\chi^2/df = 2.179$, CFI = 0.964, TLI = 0.957, GFI = 0.931, RMSEA = 0.048, SRMR = 0.041, *** $p < 0.001$

4.4 Direct and Indirect Effects

Table 2 presents the direct and indirect effects among the study constructs, together with the bootstrap standard errors and 95% confidence intervals. The results indicate that Lazy Economy (LE) had positive direct effects on Smart Home Automation Usage (SHA) (DE = 0.641) and Automation Dependency (AD) (DE = 0.314). Similarly, SHA had positive direct effects on Perceived Effortlessness (PE) (DE = 0.692) and AD (DE = 0.476). In contrast, AD (DE = −0.481) and PE (DE = −0.325) had negative direct effects on Self-Efficacy (SE), whereas SE had a positive direct effect on Brand Appreciation (BA) (DE = 0.726). The 95% bootstrap confidence intervals for these direct effects did not include zero, indicating statistically significant relationships.

Regarding The indirect effects were examined using bootstrapping with 5,000 resamples to estimate the standard errors and 95% confidence intervals. LE indirectly influenced AD through SHA (LE → SHA → AD), with an indirect effect of 0.305. This finding indicates that SHA serves as a mediating mechanism in the relationship between LE and AD. In addition, LE had a negative indirect effect on BA through SHA, PE, and SE (IE = −0.105), as well as through AD and SE (IE = −0.110). These results suggest that the influence of LE on brand appreciation may operate through automation-related experiences and their subsequent effects on consumers' self-efficacy. Furthermore, SHA had negative indirect effects on BA through PE and SE (IE = −0.163) and through AD and SE (IE = −0.166). AD and PE also had negative indirect effects on BA through SE, with coefficients of −0.349 and −0.236, respectively. These findings highlight the mediating role of SE in linking automation-related factors to brand appreciation.

Table 2 Bootstrap Analysis Direct (DE), Indirect (IE), and Total Effects (TE)

Relationship	DE	IE	TE	Boot SE*	95% LLCI*	95% ULCI*	Result
LE → SHA	0.641	–	0.641	0.035	0.572	0.708	Significant
LE → AD	0.314		0.314	0.039	0.232	0.384	Significant
SHA → PE	0.692	–	0.692	0.032	0.627	0.753	Significant
SHA → AD	0.476	–	0.476	0.038	0.401	0.550	Significant
AD → SE	−0.481	–	−0.481	0.040	−0.559	−0.401	Significant
PE → SE	−0.325	–	−0.325	0.038	−0.399	−0.250	Significant
SE → BA	0.726	–	0.726	0.030	0.666	0.783	Significant
LE → SHA → AD		0.305	0.305	0.026	0.225	0.357	Significant IE
LE → SHA → PE → SE → BA		– −0.105	−0.105	0.018	−0.141	−0.070	Significant IE
LE → AD → SE → BA		– −0.110	−0.110	0.019	−0.148	−0.074	Significant IE
SHA → PE → SE → BA		– −0.163	−0.163	0.025	−0.213	−0.115	Significant IE
SHA → AD → SE → BA		– −0.166	−0.166	0.024	−0.214	−0.120	Significant IE
AD → SE → BA		– −0.349	−0.349	0.037	−0.425	−0.281	Significant IE
PE → SE → BA		– −0.236	−0.236	0.031	−0.300	−0.178	Significant IE

5. Conclusion

5.1 Convenience and Automation Reliance

The findings reveal that the Lazy Economy operates as a convenience-oriented behavioral force that encourages both the adoption and continued reliance on smart home automation. Lazy Economy significantly increased Smart Home Automation Usage ($\beta = 0.641$, $p < 0.001$) and Automation Dependency ($\beta = 0.314$, $p < 0.001$), while Smart Home Automation Usage further increased Perceived Effortlessness ($\beta = 0.692$, $p < 0.001$) and Automation Dependency ($\beta = 0.476$, $p < 0.001$). Viewed through Self-Determination Theory, these relationships suggest that consumers are initially attracted to smart home technologies because they reduce routine burdens and facilitate efficient goal attainment (Ryan & Deci, 2020). Cognitive Load Theory further explains why repeated automation becomes attractive: by transferring routine decisions and operational demands to intelligent systems, automation lowers the cognitive resources required for household management (Sweller et al., 2019). The qualitative findings reinforce this interpretation, as participants described busy lifestyles, convenience, and simplified household routines as central reasons for adopting and repeatedly using automated systems. Taken together, the findings extend prior smart home research by showing that convenience is not merely an adoption benefit; it can initiate a behavioral progression in which repeated effort reduction gradually normalizes reliance on automation.

5.2 Automation Reliance and Capability Erosion

The second mechanism concerns the psychological cost of increasingly effortless and dependent technology use. Automation Dependency negatively influenced Consumer Self-Efficacy ($\beta = -0.481$, $p < 0.001$), and Perceived Effortlessness also negatively influenced Consumer Self-Efficacy ($\beta = -0.325$, $p < 0.001$). These relationships provide the central evidence for the convenience–capability paradox proposed in this study. Although automation reduces the effort required to manage household activities, repeated delegation of tasks can simultaneously reduce opportunities for consumers to practice skills, make independent decisions, and accumulate mastery experiences. Social Cognitive Theory explains this mechanism because self-efficacy is strengthened through successful personal performance and repeated mastery experiences (Bandura, 2001). The qualitative evidence provides contextual support for this interpretation: participants reported feeling less capable

of completing routine household activities without technological assistance after becoming accustomed to automated systems. Accordingly, the findings suggest that effortlessness should not be interpreted exclusively as a positive technology outcome. These findings suggest that convenience may be associated with lower perceived self-efficacy when users experience automation as substituting for their own participation. However, because this study did not test threshold or nonlinear effects, it cannot identify a level of automation reliance beyond which this association emerges. The results should therefore be interpreted as evidence of negative relationships with perceived self-efficacy, rather than proof that reliance eventually weakens consumers' ability to function independently.

5.3 Capability Erosion and Brand Consequences

The third mechanism links the psychological consequences of automation to downstream brand evaluation. Consumer Self-Efficacy exerted a strong positive effect on Brand Appreciation ($\beta = 0.726$, $p < 0.001$), indicating that consumers' evaluations of smart home brands are closely associated with whether technology allows them to retain a sense of competence and control. This finding extends conventional assessments of usefulness, ease, and convenience by highlighting the psychological value of consumer autonomy. Although automation can reduce consumer effort, it may create a less favorable long-term experience if users perceive themselves as increasingly dependent on technology. The qualitative findings similarly indicated stronger appreciation for brands that balanced convenience with user empowerment and preserved opportunities for personal control. This interpretation is consistent with Social Cognitive Theory, which emphasizes individuals' beliefs in their capabilities (Bandura, 2001), and with research linking consumer self-efficacy to brand identification (Pasha et al., 2023). More broadly, these findings clarify the Lazy Economy Dilemma: smart home technologies create immediate functional value through convenience, yet sustainable brand appreciation may depend on whether this convenience is delivered without eroding consumers' sense of capability.

6. Recommendations

6.1 Theoretical Contributions

This study makes several theoretical contributions to the smart home automation and consumer behavior literature. First, rather than treating the Lazy Economy merely as a convenience-oriented consumption trend, this study conceptualizes it as a convenience–capability paradox in smart home consumption. Smart home automation creates consumer value by reducing the physical and cognitive effort required for everyday household activities; however, the same reduction in effort can progressively increase automation dependency and perceived effortlessness, thereby weakening consumers' opportunities for mastery experiences and diminishing their perceived self-efficacy. This paradox demonstrates that technological convenience can simultaneously generate functional benefits and unintended psychological costs.

Second, the study advances a mechanism-based theoretical explanation by integrating Self-Determination Theory, Cognitive Load Theory, and Social Cognitive Theory into a sequential process rather than treating them as parallel perspectives. Specifically, convenience motivation encourages consumers to delegate household activities to automation; this delegation reduces the cognitive and operational effort required for everyday tasks; and repeated reductions in active task engagement subsequently limit mastery experiences that sustain self-efficacy. The resulting sequence convenience motivation, reduced cognitive effort, diminished mastery experience, and lower self-efficacy clarifies how the immediate benefits of automation can develop into longer-term capability costs. This integration therefore extends the three theories by specifying the

cross-theoretical mechanism through which convenience-oriented automation produces the convenience–capability paradox.

Third, the study connects this psychological consequence of automation to a downstream marketing outcome by identifying Consumer Self-Efficacy as a central mechanism shaping Brand Appreciation. In doing so, the study extends smart home research beyond technology adoption, usefulness, and satisfaction by showing that the long-term value of automation depends not only on how much effort technology removes, but also on whether consumers retain a sense of competence and control. Finally, the mixed-methods design strengthens this theoretical explanation by integrating structural relationships with contextual insights into how consumers experience the convenience–capability trade-off in everyday smart home use.

6.2 Practical, Policy, and Future Research Recommendations

The findings suggest that smart home providers should move beyond convenience-maximizing automation toward empowering automation that reduces routine effort without eliminating consumers' sense of competence and control. This recommendation is particularly important because Automation Dependency and Perceived Effortlessness were negatively associated with Consumer Self-Efficacy, whereas Consumer Self-Efficacy strongly enhanced Brand Appreciation. Smart home brands should therefore provide adjustable automation levels, accessible manual overrides, skill-preserving modes, and feedback functions that allow users to understand, modify, and occasionally perform automated tasks themselves. Rather than maximizing the number of activities delegated to intelligent systems, providers should evaluate automation according to whether it preserves meaningful user participation and mastery experiences. Such human-centered design may enable firms to retain the immediate convenience benefits of automation while reducing capability erosion and supporting more sustainable Brand Appreciation.

From a policy perspective, government agencies and organizations responsible for digital transformation should develop human-centered and consumer-capability design guidelines for smart home technologies. Such guidelines should encourage providers to design automated systems that enhance convenience without unnecessarily replacing consumers' opportunities to exercise judgment, maintain household skills, and retain meaningful control over automated decisions. Policy frameworks may therefore promote design principles such as accessible manual overrides, adjustable levels of automation, transparent system feedback, and user-learning features that support continued competence and informed participation. Public awareness and digital literacy initiatives should likewise emphasize not only the efficient use of smart technologies but also the importance of maintaining consumers' ability to understand, supervise, and independently manage technology-assisted tasks. By incorporating consumer capability into responsible smart home governance, policymakers can support innovation while reducing the potential for excessive automation dependency and capability erosion.

Future research could examine additional psychological factors, including technology trust, technology anxiety, digital literacy, perceived control, and technology readiness, to clarify consumer responses to smart-home automation. Studies across countries, age groups, and cultural contexts could assess the transferability of the proposed framework. Longitudinal or experimental designs would also help establish temporal ordering and test whether changes in automation use precede changes in perceived self-efficacy and brand appreciation.

6.3 Limitations

First, the study used a cross-sectional design, with data collected at one point in time. Although the structural model identifies statistically significant associations among Automation Dependency, Perceived Effortlessness, Consumer Self-Efficacy, and Brand

Appreciation, the design cannot establish temporal order or causal effects. It therefore cannot determine whether reliance on smart-home automation precedes changes in perceived self-efficacy, whether consumers with lower self-efficacy rely more heavily on automation, or whether both are influenced by other factors. Longitudinal and experimental studies are needed to examine these possibilities and to assess whether the relationships change as consumers gain experience with smart-home technologies.

Second, the study relied on self-reported questionnaire data. Respondents' answers may be affected by recall limitations, social desirability, individual interpretation of the items, or a tendency to respond consistently across measures. Collecting the measures from the same respondents in the same survey may also increase the possibility of common-method variance. Accordingly, the reported relationships should be interpreted with these potential measurement limitations in mind. Future research could combine survey responses with behavioral data, observed interaction with smart-home devices, or assessments collected at different time points.

Third, the study used purposive sampling in the Bangkok Metropolitan Area. This approach enabled the study to reach respondents relevant to the research context, but the sample may not represent all smart-home users in Thailand or other countries. Differences in age, income, digital literacy, household structure, technology access, and cultural context may shape how consumers experience automation and evaluate brands. The findings should therefore be generalized cautiously beyond the population and setting represented in this study. Replication using broader geographic coverage and alternative sampling strategies would help assess the robustness and transferability of the proposed relationships.

Fourth, Consumer Self-Efficacy was measured as respondents' perceived capability rather than through direct tests of actual household skills or performance. The findings therefore indicate an association between automation-related perceptions and consumers' confidence in their own capabilities; they do not demonstrate that smart-home automation causes an objective loss of ability or that users' practical skills have deteriorated. The term "capability erosion" should consequently be understood as a possible interpretation concerning perceived self-efficacy, not as a directly measured outcome. Future studies could distinguish perceived self-efficacy from actual task performance by including behavioral tasks, performance measures, or assessments before and after sustained use of automation.

7. Acknowledgements

The author gratefully acknowledges the participants who contributed their time and experiences to this study.

8. Conflict of Interest

The author declares no conflict of interest.

9. The Author's Biography

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