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Factors Determining the Acceptance of E-Wallet among Gen Z from the Lens of the Extended Technology Acceptance Model

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Abstract: E-wallets are one of the breakthroughs brought forth by the evolution of FinTech, which has been accentuated by the global outbreak of COVID-19. Therefore, it is critical to comprehend the factor of e-wallet acceptance. As this technology advances, substantial knowledge and research gaps become apparent. Previous studies on e-wallet acceptance have overlooked the importance of motivation and self-efficacy. There is a dearth of focus on certain age groups, such as Gen Z, which is currently the trendsetter of new technologies. This study aims to close the gaps regarding the lack of focus toward Gen Z, motivation, and self-efficacy in understanding e-wallet acceptance by combining the Technology Acceptance Model (TAM) with Self-Determination Theory (SDT), Self-Efficacy (SE), and Digital Media Self-Efficacy (DMSE) to fully understand the factors influencing e-wallet acceptance among Gen Z, using 233 samples to test 16 hypotheses derived from the identified research and knowledge gaps. External Regulation (ER), SE, and DMSE are the determinants of acceptance, according to Structural Equation Model analysis conducted. Mediation analysis reveals that Attitude toward Use (AT) is the full mediator of Perceived Usefulness (PU) and Perceived Ease of Use (PEU). The quintessential outcome of this research is the Model of E-Wallet Acceptance among Gen Z, which is significant for FinTech industries looking to strategically roll out e-wallet initiatives as well as a point of exploration for numerous future academic research and development.

Keywords: technology acceptance model; motivation; digital media self-efficacy; e-wallet; Generation Z

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1. Introduction

Cashless transactions are on the verge of becoming the norm, with the potential to render physical transactions with fiat currency obsolete. The market's strategic industries, such as tourism [1], business [2], and healthcare [3], have adopted the new innovation of digital payments. According to reports, the advent of FinTech [4,5] and the COVID-19 pandemic [6] have contributed to the emergence of cashless transactions. E-wallets are developing as one of the mechanisms for severing the transmission chain, as they foster social distance [7,8]. Virus-related health risk avoidance is claimed to have a major impact on the users of e-wallets [9] and other related technological applications [10,11]. COVID-19 further contributes to the growth of cashless transactions by driving national digitalization [12], causing a massive surge in cashless transactions [13], making consumers more receptive to electronic banking [14], and ensuring adherence with health-related regulations linked with the virus [15]. After the pandemic, the digital transaction ecology has become more mature and competitive [16]. Studies in the United States, Great Britain, Japan, Canada, and Australia throughout the outbreak divulged a marked increase in the

digitalization of transactions [17]. In the future, cashless transactions will be the primary method of payment.

E-wallet is one of the key vehicles for propagating the innovation offered by FinTech as it is secure, mobile, and easily accessible. E-wallet is defined as a method of digitalized payment in which the available funds are held on a server as opposed to a chip [18]. It was also described as an electronic card that enables digital transactions via smartphone [19]. This FinTech invention's most significant contribution is the virtualization of debit and credit cards, which eliminates the need for consumers to carry this physical financial medium and offers a new level of innovation in monetary transactions [20]. In the past few years, e-wallets have evolved into a method for tracking transactions with a focus on cost effectiveness [21]. Additionally, corporate organizations are recommended to develop business strategies to capture the intent of prospective clients in the e-wallet market share [22]. Thus, e-wallets merit study in light of modern structural adjustment toward the digital economy, as digitalization shapes the global economic landscape [23,24]. This is backed by the fact that e-wallets are also gaining popularity in the G20 member states, Indonesia [25,26] and India [27].

Despite the increasing popularity of e-wallets, obstacles and barriers continue not only in industrialized nations but also in emerging ones such as Malaysia [28]. Simultaneously, Gen Z is the driving force behind FinTech innovations such as e-wallets [29]. According to the study, the introduction of e-wallets facilitates the broad financial inclusion of society [30] and may sometimes result in excessive spending by youngsters [31]. However, security concerns such as fraud impede the adoption of such technology [32]. At the same time, there is a need for further research on the topic of technology for specific age groups [33–35].

Numerous studies on e-wallets with diverse perspectives and outcomes have been published worldwide. To ensure the continued use of e-wallets, it is advocated that trust should be prioritized as the significant driver [36]. The different phenomena are noticed as Perceived Usefulness (PU), and it is also noted that trust does not affect the continued use of e-wallets [37]. During COVID-19, the intention to continue using an e-wallet is mediated by subjective wellbeing and impacted by perceived security [38]. The majority of these studies were undertaken to comprehend the acceptance [39–41] and continued use of e-wallets [42,43]. Nonetheless, a significant proportion of research has focused on the adoption of e-wallets rather than their continued use [44–46]. The acceptance of e-wallets was researched using the Technology Acceptance Model (TAM) [47–49] and the Unified Theory of Acceptance of Technology Usage (UTAUT) [22,44,50]. In the case of Gen Z customers, however, a significant number of research gaps exist in terms of e-wallet acceptance and TAM, such as a lack of focus on Gen Z [51] and the motivation element receiving less consideration when attempting to comprehend e-wallet acceptance.

Individual self-efficacy is believed to influence an individual's acceptance of a technology introduced in the financial sector in general [52]. In other technology, the analogous posture can be evidenced [53–55]. Self-efficacy has been empirically demonstrated to influence Gen Z's acceptance of technology. For example, a study on contactless services [56], healthcare wearables [57], and cyberloafing [58] indicates that self-efficacy influences Gen Z. However, it is unsure how self-efficacy directly impacts the adoption of e-wallets, given few studies on e-wallets highlight self-efficacy as a factor leading to their acceptability [20,45,48]. This creates a vacuum in our modern understanding of self-efficacy.

Thus, the present study is going to fill in the research gaps by extending TAM with the motivation element to better understand the factors that influence the acceptance of e-wallets among Gen Z—as motivation has been long neglected in understanding the acceptance of e-wallets. Furthermore, this study will bridge the knowledge gap about the role of self-efficacy in the acceptance of e-wallets among Gen Z. Eventually, our research would allow for a much deeper and broader knowledge of the acceptance of e-wallets from the orientations of TAM, motivation, and self-efficacy among Gen Z, who are currently the foremost trendsetters of new technologies in the information age. Even though FinTech is rapidly advancing with many forms of technologies, constraints such as slow adoption

among users linger [59], necessitating extensive research on the acceptance of FinTech innovation among users, such as the study we are undertaking.

This study would substantially contribute to the body of knowledge by providing a starting point for future research on e-wallets, particularly in relation to certain age brackets. It contributes to the literature on TAM as one of the most researched models for comprehending technology acceptance. This research will contribute to the expansion of motivation theory into e-wallet acceptance and TAM in order to enlighten the industry and scholars about the current situation of the most recent FinTech innovation, in this instance, e-wallets among consumers.

Due to the fact that Gen Z is regarded to be distinct from past generations, which may affect the global market [60], now is the ideal time for academics and businesses to do studies comparable to the one we have conducted. Gen Z is also suggested as highly influential toward FinTech technologies [29]. Simultaneously, the globe is going toward cashless transactions, particularly after the outbreak of the pandemic [61]; both cashless transactions and the pandemic bring about enormous changes. As the pandemic revealed a considerable increase in affective elements such as stress levels among individuals [62,63], it is believed that affective factors such as motivation in technology will become increasingly important in the future [64]. Consequently, based on the notion of timeliness, our current research is timely.

In order to fulfil the purpose of our research, the paper is structured into seven sections, including this Introduction section. In the Literature Review and Hypotheses section, hypotheses are formulated based on the identified research gaps in the literature review. This enables the researchers to ensure not only the soundness of the ideas but also the novelty of the research by filling identified gaps in the current literature. The third section of the methodology links the hypotheses to their methodological implementation and sampling technique. This leads to a wide range of data analysis in Section 4, which assesses the acceptance or rejection of the hypotheses using a series of detailed statistical analyses utilizing the Covariance-based Structural Equation Model. In Section 5, the significance of the study and its theoretical and practical inputs to the current body of knowledge are addressed. In Section 6, we address the limitations of our study and how it may contribute to future research, and in Section 7, we draw conclusions based on empirical studies.

2. Literature Review and Hypotheses

To address the aforementioned research gap, TAM, Self-Determination Theory (SDT), and self-efficacy theory were combined to probe Gen Z's acceptance of e-wallets. TAM is incorporated as the predominant framework for understanding technology acceptance since it is a widely acknowledged paradigm [65–67]. SDT by Deci, Connell, and Ryan [68] is incorporated as a motivational theory to comprehend the acceptance of e-wallets. For Bandura's [69] theory of self-efficacy, the theory serves as a means to comprehend the role of self-efficacy in the acceptance of e-wallets, which has been neglected in the current state of study. The literature review begins with SDT, then self-efficacy, and concludes with TAM to accommodate the articulation of hypotheses.

2.1. Self-Determination Theory (SDT)

SDT was introduced in 1989 [68]. It is the most predominant theory of motivation [64]. This theory comprises of six mini-theories: Cognitive Evaluation Theory, Organismic Integration Theory, Basic Psychological Need Theory, Causality Orientations Theory, Goal Content Theory, and Relationship Motivation Theory. The theory's practical value in different domains has been thoroughly validated [70]. Yet, several research gaps exist regarding SDT.

First, to the best of our knowledge, SDT was never incorporated into the comprehension of the acceptance of e-wallets as motivation, which receives inadequate consideration. Precisely, SDT was never studied to comprehend Gen Z's acceptance of e-wallets. In contrast to other theories, such as the Theory of Planned Behavior [7,71], Task-Technology

Fit [47], which is more cognitive in nature, has gained substantial attention for explaining the acceptance of e-wallets.

The second research gap is that SDT has not yet been adequately integrated with other theories, which may restrict our knowledge of the theory's full capacity to comprehend human motivation [64]. It is suggested that the future of SDT will involve the combination of SDT with technology understanding [72]. Consequently, this study attempts to fill this deficiency by integrating SDT and TAM to fully grasp Gen Z's acceptance of e-wallets.

The third knowledge gap is that SDT was primarily researched from the standpoint of basic psychological needs, which include autonomy, competence, and relatedness [73,74]. Whereas, other SDT variables, such as Intrinsic Motivation (IM), Identified Regulation (IR), External Regulation (ER), and Amotivation (A), remain largely unexplored and represent a substantial gap in the advancement of SDT as a motivational theory [64]. Ultimately, this raises the question of what role IM, IR, ER, and A contribute to anticipating the acceptance of e-wallets among Gen Z based on the implicit nature of TAM.

To address the stated research gaps, this study will incorporate SDT into TAM so that the function of SDT based on IM, IR, ER, and A may be comprehended. We anticipated that SDT in the form of IM, IR, ER, and A as a motivating theory could serve as a predictor for the two TAM variables which PU based on findings from prior research on various technical advancements [75,76]. The acceptance of e-wallets has not been studied with a focus on motivation [77,78], hence its actual influence remains largely unknown. In lieu of specifying the magnitude or direction of the predictive role played by IM, IR, ER, and A, we opt to assume that these SDT factors would impact PU and PEU positively, except for A which is proven to function as a negative determinant [79,80]. Thus, the following hypotheses were formulated to understand the relationship:

H1: *IM positively and significantly impacts Gen Z's PU about e-wallets.*

H2: *IR positively and significantly impacts Gen Z' PU about e-wallets.*

H3: *ER positively and significantly impacts Gen Z's PU about e-wallets.*

H4: *A negatively and significantly impacts Gen Z's PU about e-wallets.*

The second factor that exists in TAM as the connection toward external factors is Perceived Ease of Use (PEU). PEU is the perception that a technology is easy to operate, and its benefits outweigh the effort necessary to operate the technology [81]. In addition to PU, the effects of IM, IR, ER, and A on PEU are relatively unexplored at this time. Some research investigated e-wallets without PU and PEU predictors [22,82,83] or lacking any motivation theory as predictors [47]. As the nature of the relationships was uncertain, we opt to infer that IM, IR, and ER will have a positive impact on PEU, and A will have a negative impact on PEU. This led to the formulation of these hypotheses:

H5: *IM positively and significantly impacts Gen Z's PEU about e-wallets.*

H6: *IR positively and significantly impacts Gen Z's PEU about e-wallets.*

H7: *ER positively and significantly impacts Gen Z's PEU about e-wallets.*

H8: *A negatively and significantly impacts Gen Z's PEU about e-wallets.*

2.2. Self-Efficacy

Bandura popularized the self-efficacy notion [69]. Self-efficacy has been demonstrated to increase performance [84] and impact individual motivation and selection process [85]. Despite the fact that the theory has been established for decades, critical research gaps remain undiscovered.

Most of the research about self-efficacy was conducted in the western part of the globe. Despite efforts to undertake self-efficacy research in Africa [45] and a mixture of Africa and Europe [86], the sample group of Gen Z continues to be overlooked. This research will contribute considerably to the advancement of self-efficacy research and the resolution of

self-efficacy-related cultural gaps by presenting fresh information regarding self-efficacy in the context of Asia and utilizing samples from Gen Z.

The second shortcoming is that self-efficacy is one of the most prevalent factors incorporated in TAM when attempting to comprehend human acceptance of technology [87–89]. This is not the case, however, when it comes to studying the acceptance of e-wallets [32,49]. Consequently, the influence asserted by self-efficacy on the acceptance of e-wallets is unclear, particularly with regards to Gen Z. To investigate the influence of self-efficacy, we present Self-Efficacy (SE) as an external variable of TAM, based on study conducted by Compeau and Higgins [90]. The following hypotheses were therefore proposed:

H9: *SE positively and significantly impacts Gen Z's PU about e-wallets.*

H10: *SE positively and significantly impacts Gen Z's PEU about e-wallets.*

SE by Compeau and Higgins [90] has developed to incorporate Digital Media Self-Efficacy (DMSE) as a variation [91]. As digital devices such as tablets and smartphones become increasingly indispensable to human existence, the necessity to comprehend DMSE is becoming more vital than ever [91]. In the 21st century, the effect of DMSE on youngsters, such as university students (who are primarily members of Gen Z), is enormous, particularly following the digitization wave brought about by the pandemic [92]. In the near future, DMSE will play a pivotal function in the digital realm, as it may have an impact on the most recent evolution in education, such as home-based learning [93]. Unfortunately, DMSE is still unexplored when attempting to comprehend the acceptance of e-wallets among all sample types, including Gen Z. Thus, the following hypotheses were proposed:

H11: *DMSE positively and significantly impacts Gen Z's PU about e-wallets.*

H12: *DMSE positively and significantly impacts Gen Z's PEU about e-wallets.*

2.3. Technology Acceptance Model (TAM)

TAM is a widely employed model of technology acceptance comprising four factors which are PU, PEU, Attitude Toward Technology (AT), and Behavioral Intention (BI) [94]. The model consisted of three primary responses: cognitive response (predicted by PU and PEU), affective response (based on AT), and behavioral response (predicted by BI) [94]. The acceptance of a technology is associated with BI, and BI is determined by PU and PEU as the main determinants via AT as a mediator. The model has been implemented in numerous FinTech-related fields, including understanding the acceptance of cloud-based enterprise [95], financial portals [96], digital Islamic banks [97], and digital investment services [98]. Nonetheless, this model also garnered numerous criticisms that make room for further improvement and exploration.

One of the shortcomings of TAM is that it concentrates cognitive elements such as PU and PEU but not motivation, especially IM [87]. This research, which combines TAM with SDT and incorporates IM, contributes to the expansion of TAM scholarship. Combining TAM with external factors such as SDT and SE increases its explanatory power, allowing for a more in-depth explanation of the technological acceptance phenomenon [99]. There is also evidence that the pandemic drastically impacted the financial behavior of the worldwide population, as indicated by the increased frequency of digital transactions [100]. Yet, understanding the acceptance of e-wallets in depth remains an important central purpose [101,102]. The acceptance of e-wallets by Gen Z based on TAM is still a solid research gap. Thus, to further comprehend Gen Z's acceptance of e-wallets, the following hypotheses will be tested:

H13: *PU positively and significantly impacts Gen Z's AT about e-wallets.*

H14: *PEU positively and significantly impacts Gen Z's AT about e-wallets.*

H15: *PEU positively and significantly impacts Gen Z's PU about e-wallets.*

H16: *AT positively and significantly impacts Gen Z's BI about e-wallets.*

Most studies opt to remove AT from TAM due to the notion that it has a weak mediating effect. However, because e-wallets are a relatively new technology, their influence may differ. This research will retain AT as a factor of TAM and evaluate its mediating function. On the premise of the formulation of these 16 hypotheses, the testing of the following theoretical framework is proposed as in Figure 1.

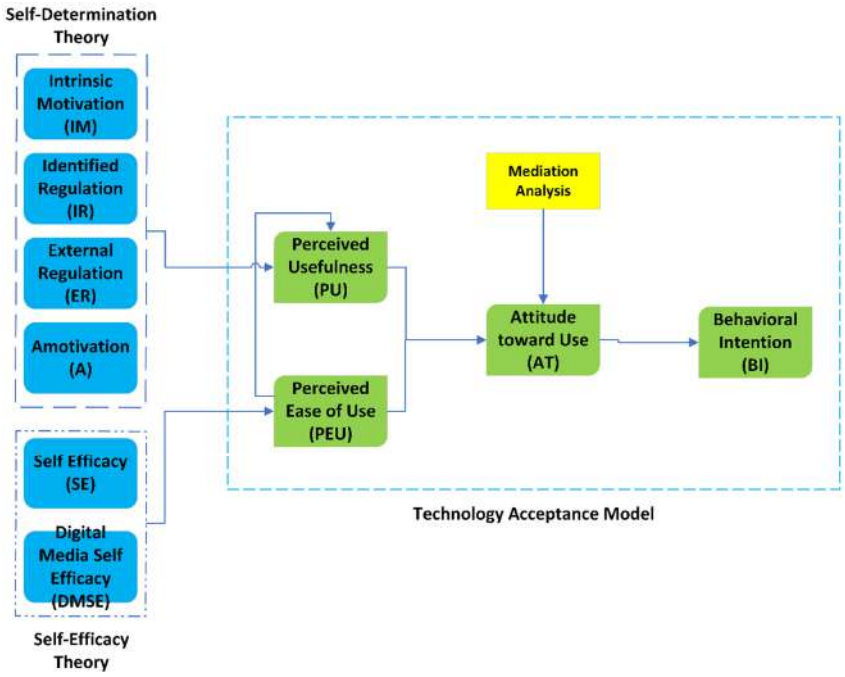

Figure 1. Theoretical Framework.

2.4. Justification for Integrating SDT, Self-Efficacy, and TAM into Extended TAM

In order to integrate TAM with SDT, the SDT variables IM, IR, ER, and A were positioned as prospective determinants of PU and PEU. Two variables representing Self-Efficacy, SE and DMSE, were connected to TAM as predictive factors of PU and PEU using the same approach. The practice of associating external variables as predictors of PU and PEU is widespread in TAM research [103,104]. It is also utilized in Venkatesh's popular literature about TAM [105]. Other strategies of incorporating external variables into extended TAM, such as direct linkage toward adoption [106] or AT [107], are also employed. Davis, the model's founder, proposed extending TAM by connecting external factors to PU and PEU [94]. Our current strategy of incorporating external factors into the extended TAM via PU and PEU is therefore justified.

The integration of SDT, Self-Efficacy, and TAM is intended to close research gaps regarding e-wallets, as earlier studies paid insufficient attention to users' motivation and efficacy regarding the technology. The extension of TAM also overcomes the shortcomings of the original TAM by enhancing the model's explanatory power, as TAM has been criticized for being overly focused on cognitive processing and lacking an emotive paradigm [99]. The inclusion of SDT resulted in an extended TAM, which made it possible to test a superior model spanning two aspects of technological usage, namely the cognitive and attitude-based model of TAM and the motivational model based on SDT. The incorporation of SDT is also supported by Ryan and Deci's argument, which advocates combining SDT with other relevant frameworks given that the theory was designed to allow researchers to extend it [70]. Self-efficacy integration into TAM enables us to comprehend the crucial function of technological efficacy in determining user response to technology [108], in this case, e-wallets. This strategy is also consistent with the proposal provided by prior research based on a comprehensive systematic literature review that self-efficacy is one of the required external variables for TAM [87,89]. On the basis of the stated justification,

we propose extending TAM by incorporating SDT, self-efficacy (using SE and DMSE as variables), and TAM.

3. Methodology

This study employs a correlational research design to comprehend the relationships between the variables under investigation, and then proposes a framework of e-wallet acceptance based on the tacit of expanded TAM, SDT, and self-efficacy. The following describes the methodology:

3.1. Samples

The questionnaire was distributed to young Malaysians via Google Form for online distribution. The samples were collected using the technique of convenience sampling. The convenience sample technique was used to ensure that each sample in this study has access to an e-wallet and has prior familiarity with its use. In addition to having access to and experience with e-wallets, the primary characteristic of the sample is that they are affiliates of Gen Z. This generation consists of individuals born in 1995 or later who already are currently 28 years old or younger [109]. Thus, convenience sampling was initiated to ensure that all of these criteria are met prior to sample participation in the study. We do not employ random sampling, such as randomly selecting members of Gen Z, as this would be impractical given that not all members of Gen Z are familiar with FinTech innovations such as e-wallets [110]. All of the samples provided consent at the beginning of the questionnaire before commencing to answer the questions. In total, 233 individuals responded to the questionnaire, and all questions were answered as required by the Google Form settings, resulting in the absence of any missing data. The sample size determination is likewise based on a 95 percent confidence interval with a margin of error of 6.5 percent, resulting in a minimum sample size of 228 that is exceeded by this study. The sample size of 233 fulfills the required sample size based on Hair's 20:1 ratio, which requires 20 observations per independent variable [111]. This study has nine independent variables, indicating that a minimum sample size of 180 is necessary. This sample size range is further supported by Kline's suggestions that sample sizes well over 200 should be regarded as large and sufficient for Structural Equation Model analysis [112]. According to Roscoe's guideline, the sample size of 233 for this study meets the suggested sample size range of 30 to 500 samples for minimizing Type II error [113]. Thus, the sample size of 233 exceeds the minimum required sample size and is consistent with the recommendation and guideline for determining sample size [114].

The samples included 123 males (52.8% of the total) and 110 females (47.25%). Regarding age, the age distributions were as shown in Table 1.

Table 1. Samples' age distribution.

Age (Years Old)	Frequency, *f*	Percent, %
19	5	2.1
20	23	9.9
21	64	27.5
22	62	26.6
23	46	19.7
24	22	9.4
25 and older (maximum 28)	11	4.7

Overall, all the samples have experience interacting with e-wallet technology in their daily life and have access to e-wallets in term of smart devices, banking facility, as well as e-wallet payment mode which is set as the prerequisite to join this study as sample.

3.2. Instrument

This study employs a questionnaire that was developed based on the work of pioneering researchers in the field. The questionnaire contains 48 questions organized into 4 sections. The Section 1 gathered demographic information about the samples, including their age and gender. Based on SDT, Section 2 consists of tasks that explore the IM, IR, ER, and A. Section 3 asks samples about their SE and DMSE, while the Section 4 measures the acceptance of e-wallets based on TAM. All TAM, SDT, SE, and DMSE questions use a 5-point Likert scale. There are a total of 12 items measuring SDT theory, with 3 items measuring each variable. Self-efficacy is represented by 2 variables that are measured by 7 items for SE and 5 items for DMSE, for a total of 12 items that measure the self-efficacy theory. For TAM, 24 items were used to measure this model, with 6 items measuring PU and 6 more testing PEU. Two more variables of TAM, BI and AT, are represented by eight and four items, respectively. The items are as in Appendix A.

3.3. Data Analysis

The data were analyzed using inferential statistics. The inferential statistics involved high-end analysis using Covariance-based Structural Equation Model via IBM SPSS AMOS 28 and IBM SPSS Statistics 27. The Structural Equation Model was executed in four phases involving Confirmatory Factor Analysis (CFA), Measurement Model, Structural Model, and, finally, the inspection of mediation analysis.

The CFA will examine the loading of items into each construct, Construct Reliability (CR), and Average Variance Extracted (AVE), which comprise the Convergence Validity of the instrument. The CR was computed using the following formula [115,116]:

$$CR = \frac{(\sum \lambda)^2}{(\sum \lambda)^2 + (\sum \delta)}$$

The purpose of CR is to evaluate the reliability of the tested variable. The calculation of CR requires two fundamental values: the factor loading, λ, and the measurement error, δ. The following formula was utilized to calculate AVE [116,117]:

$$AVE = \frac{\sum \lambda^2}{n}$$

The AVE is calculated in order to ensure the Convergent Validity of the study variable, where n is the number of indicators or items. Simultaneously, the model fit of the CFA was evaluated based on the respective theories of TAM, SDT, and self-efficacy. Cronbach's alpha reliability is also reported to further validate and corroborate the Convergence Validity produced by CFA analysis [116].

The Measurement Model will examine the link between the observable and latent variables in this study. This test will guarantee that there is no strong correlation or association between the variables to ensure that the Structural Equation Modeling analysis produces valid and reliable results. In this stage, the Discriminant Validity of the data is also evaluated using the Heterotrait–Monotrait ratio of correlations (HTMT), which has been shown to be suitable for the Covariance-based Structural Equation Model [99]. Additionally, Discriminant Validity will aid the researcher in identifying any multicollinearity issues with the data.

The Structural Model permits researchers to examine the proposed relationships between variables in the theoretical model and to comprehend the nature of each interaction involved. The Structural Model serves as the foundational test that determines whether or not this study's presented hypothesis is accepted or rejected. Finally, the Structural Model will be used to investigate the variables' mediation analyses. The comparative fit index (CFI), Tucker-Lewis index (TLI), Standardized Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA) are used to evaluate the models using benchmark values established by Hu and Bentler [118].

4. Findings

4.1. Confirmatory Factor Analysis (CFA)

Based on theories integrated into the theoretical model, the CFA was performed. All 16 items from the SDT theory, 15 things from the self-efficacy theory, and 26 items from the TAM theory were evaluated. Table 2 displays the outcome of the convergence validity of the items and variables.

Table 2. Instrument CFA, item loading, CR, AVE, and Cronbach's alpha.

Theory/Model	Fit Indices	Variable	Item	Loading, λ	CR	AVE	Cronbach's Alpha, α
SDT	χ^2 = 171.368 *df* = 48.000 χ^2/df = 3.570 CFI = 0.929 TLI = 0.903 SRMR = 0.063	IM	IM1 IM2 IM3 IM4	0.78 - 0.82 0.76	0.827	0.614	0.827
		IR	IR1 IR2 IR3 IR4	0.75 0.71 0.73 -	0.776	0.537	0.769
		ER	ER1 ER2 ER3 ER4	0.81 0.86 - 0.79	0.863	0.678	0.859
		A	A1 A2 A3 A4	0.72 0.86 0.78 -	0.828	0.617	0.825
Self–Efficacy	χ^2 = 172.996 *df* = 53.000 χ^2/df = 3.264 CFI = 0.938 TLI = 0.922 SRMR = 0.066	SE	SE1 SE2 SE3 SE4 SE5 SE6 SE7 SE8 SE9	0.74 - 0.81 0.80 0.75 0.85 0.80 0.87 -	0.927	0.647	0.927
		DMSE	DMSE1 DMSE2 DMSE3 DMSE4 DMSE5 DMSE6	0.73 0.71 0.81 - 0.82 0.85	0.890	0.618	0.887
TAM	χ^2 = 708.577 *df* = 246.000 χ^2/df = 2.880 CFI = 0.937 TLI = 0.930 SRMR = 0.030	PU	PU1 PU2 PU3 PU4 PU5 PU6	0.87 0.90 0.88 0.85 0.92 0.87	0.954	0.778	0.954
		PEU	PEU1 PEU2 PEU3 PEU4 PEU5 PEU6	0.91 0.93 0.91 0.92 0.87 0.89	0.964	0.817	0.963
		BI	BI1 BI2 BI3 BI4 BI5 BI6 BI7 BI8 BI9	0.87 0.91 0.92 0.92 0.92 - 0.88 0.90 0.91	0.973	0.818	0.973
		AT	AT1 AT2 AT3 AT4 A55	0.88 0.91 0.84 - 0.71	0.905	0.706	0.894

The CFA analysis proves that each and every theory or model has a good fit based on fit indices threshold recommended by Hu and Bentler [118]. With χ^2 = 171.368, *df* = 48.000, χ^2/df = 3.570, CFI = 0.929, TLI = 0.903, and SRMR = 0.062, the fit indices for SDT are more

than satisfactory. The same holds true for self-efficacy, which has χ^2 = 172.996, *df* = 53,000, χ^2/df = 3.264, CFI = 0.938, TLI = 0.922, and SRMR = 0.006. χ^2 = 708.577, *df* = 246.000, χ^2/df = 2.880, CFI = 0.937, TLI = 0.930, and SRMR = 0.015 are all excellent fit indices for TAM's CFA. Nonetheless, a number of items were eliminated as a result of their poor loading into the variable and significant influence on other items in the same variable. These are designated as IM2, IR4, ER3, A4, SE2, SE9, DMSE4, and AT4. When measuring fit indices, CR, and AVE, these items were omitted in their whole. The remaining items are loaded in excess of 0.50 in accordance with Hair's item load recommendation [111]. The fact that the minimum loading is 0.71 and the maximum loading is 0.93 indicates that the items have been placed in the correct variable. The CR and AVE outputs of the CFA tests indicate that all the items and variables meet the specified criteria of CR = 0.70 [111] and AVE = 0.50 [115] for all items and variables, respectively. This indicates that both the data and the instrument have a high level of Convergent Validity and are eligible for future testing.

4.2. Measurement Model

Based on the 10 variables proposed by the theoretical model, the Measurement Model was constructed. Again, the fit indices proposed by Hu and Bentler [118] were utilized as the cutoff value to establish the model's quality. The Measurement Model fit measures are good with χ^2 = 2145.029, *df* = 989.000, χ^2/df = 2.169, CFI = 0.902, TLI = 0.893, and SRMR = 0.051. The analysis continues with an examination of the data and Discriminant Validity of the instrument using HTMT. This study's Discriminant Validity is summarized in Table 3.

Table 3. Discriminant validity.

	IM	IR	ER	A	SE	DMSE	PU	PEU	BI	AT
IM										
IR	1.007									
ER	0.903	1.073								
A	0.222	0.135	0.051							
SE	0.641	0.755	0.742	0.077						
DMSE	0.547	0.591	0.621	0.254	0.657					
PU	0.696	0.832	0.832	0.033	0.857	0.691				
PEU	0.662	0.785	0.784	0.043	0.856	0.676	0.888			
BI	0.656	0.788	0.824	0.057	0.772	0.632	0.889	0.869		
AT	0.644	0.833	0.836	0.029	0.767	0.634	0.868	0.871	0.905	

As reflected by Table 3, all variables demonstrate Discriminant Validity with the exception of the test between IM–IR and IR–ER, which demonstrates an HTMT value greater than 1.0. This indicated that there is no Discriminant Validity between these variables, as there is a strong correlation between IM–IR and IR–ER. The samples regarded IM and ER to be identical to IR, and multicollinearity may exist amongst the variables, jeopardizing the study's conclusion. To address this issue, IR was eliminated from future testing and Discriminant Validity was determined.

The new Measurement Model have a better model fit measures compared to the first Measurement Model with χ^2 = 1842.548, *df* = 866.000, χ^2/df = 2.128, CFI = 0.912, TLI = 0.904, and SRMR = 0.047.

4.3. Structural Model

The Structural Model was developed using the theoretical model devoid of IR (as IR was omitted due to Discriminant Validity issue and possible multicollinearity). The Structural Model has excellent fit index values (χ^2 = 1894.191, *df* = 878.000, χ^2/df = 2.157, CFI = 0.908, TLI = 0.901, SRMR = 0.049, and RMSEA = 0.071). The Structural Model is as in Figure 2.

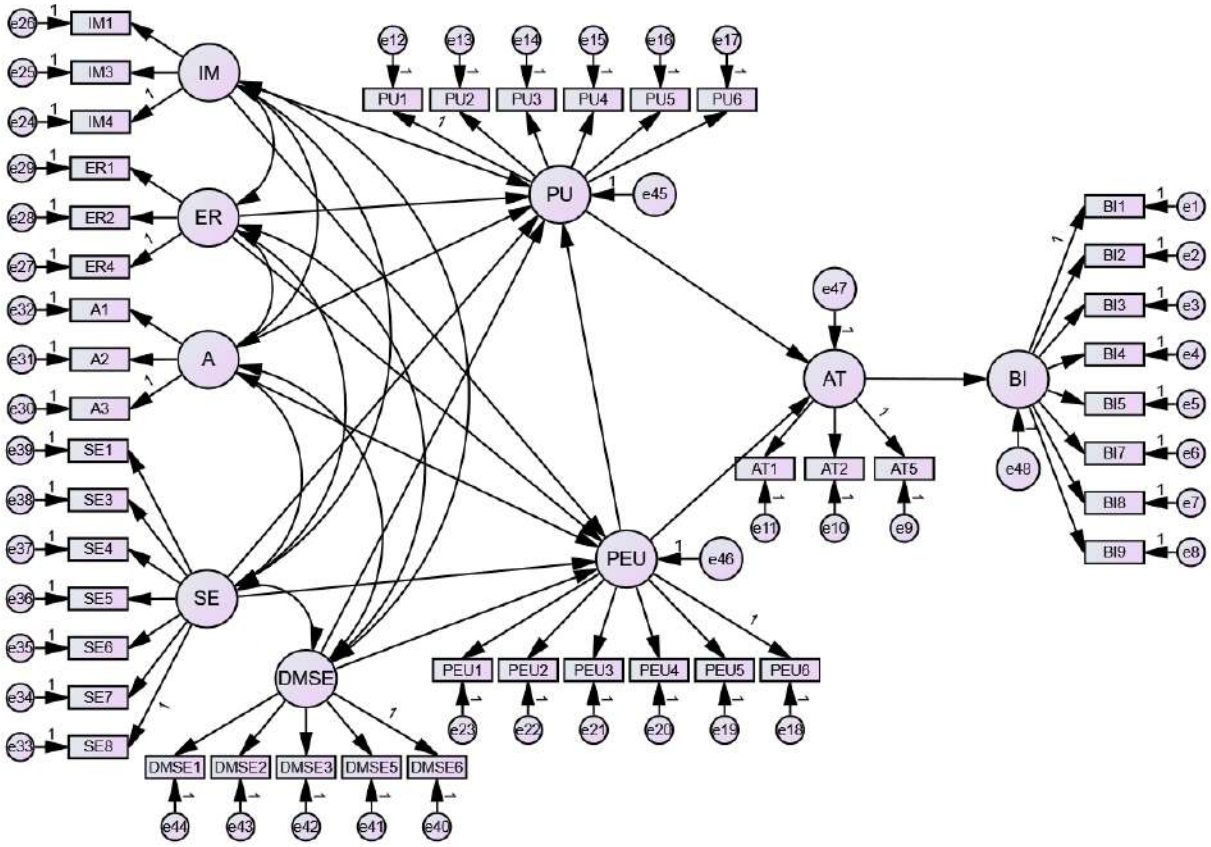

Figure 2. The Structural Model.

The hypotheses were tested by examining the estimates of the Structural Model's generated pathways. The hypotheses testing is as seen in Table 4.

Table 4. Hypotheses testing based on Structural Model.

Hypothesis	*β*	β	SE	CR	*p*	Result
H1: IM–PU	−0.194	−0.212	0.163	−1.303	0.193	Rejected
H2: IR–PU	Not tested—discriminant validity issue					Rejected
H3: ER–PU	0.520	0.602	0.216	2.790	0.005	Accepted
H4: A–PU	−0.028	−0.021	0.036	−0.598	0.550	Rejected
H5: IM–PEU	−0.139	−0.156	0.176	−0.884	0.376	Rejected
H6: IR–PEU	Not tested—discriminant validity issue					Rejected
H7: ER–PEU	0.430	0.512	0.219	2.335	0.020	Accepted
H8: A–PEU	−0.034	−0.027	0.041	−0.661	0.509	Rejected
H9: SE–PU	0.270	0.283	0.079	3.577	***	Accepted
H10: SE–PEU	0.528	0.570	0.081	7.011	***	Accepted
H11: DMSE–PU	0.095	0.113	0.062	1.819	0.069	Rejected
H12: DMSE–PEU	0.151	0.183	0.071	2.571	0.010	Accepted
H13: PU–AT	0.517	0.502	0.076	6.634	***	Accepted
H14: PEU–AT	0.452	0.426	0.072	5.938	***	Accepted
H15: PEU–PU	0.307	0.298	0.085	3.512	***	Accepted
H16: AT–BI	0.941	0.964	0.058	16.713	***	Accepted

*** indicating p value less than 0.001.

The association between IM and PU was negligible (β = −0.194, SE = 0.163, $p > 0.05$), as was the relationship between IM and PEU (β = −0.139, SE = 0.176, $p > 0.05$). ER to PU was significantly positive (β = 0.520, SE = 0.216, $p = 0.005$); ER has a favorable effect on PEU (β = 0.430, SE = 0.219, $p < 0.05$). A is insignificant toward PU (β = −0.028, SE = 0.036, $p > 0.05$) and PEU (β = −0.034, SE = 0.041, $p > 0.05$). SE has a positive correlation with

both PU and PEU (β = 0.270, SE = 0.079, $p < 0.001$: β = 0.528, SE = 0.081, $p < 0.001$). DMSE is insignificant to PU (β = 0.095, SE = 0.062, $p > 0.05$) but positively correlates to PEU (β = 0.151, SE = 0.071, $p = 0.010$). All TAM variable relationships are positive, as predicted by the core model [81]. Positive correlations between PU and PEU toward AT are very substantial. PU exert a bigger impact on AT with β = 0.517, SE = 0.076, $p < 0.001$ compared to PEU, which has a positive correlation with a somewhat smaller magnitude; there is a weaker positive association (β = 0.452, SE = 0.072, $p < 0.001$). PEU contributes positively to PU, and the association is substantial (β = 0.307, SE = 0.085, $p < 0.001$). Finally, it was determined that the AT is a key indication of BI with a very profound effect at β = 0.941, SE = 0.085, $p < 0.001$. With a variance for BI of 89 percent ($R^2 = 0.89$), AT of 88 percent ($R^2 = 0.88$), PU of 87 percent ($R^2 = 0.87$), and PEU of 80 percent ($R^2 = 0.80$), the model as provided in the theoretical model and tested in the Structural Model has an excellent capacity for explanation.

4.4. Mediation Analysis

The purpose of the mediation analysis was to comprehend the mediation role played by AT in the Structural Model. Our investigation of mediation employs the Bootstrap Method with 5000 bootstrap samples and a 95 percent biased-corrected confidence interval. First, the mediation model, indirect model, and direct model were evaluated for their respective fit indices as in Table 5.

Table 5. Fit indices of direct, indirect, and mediation model.

Model	Relationship	χ^2	AIC	PNFI
Direct	PU–AT–BI	3.383	343.086	0.785
Indirect		2.936	449.543	0.802
Mediation		2.751	427.149	0.799
Direct	PEU–AT–BI	4.068	395.191	0.778
Indirect		3.566	523.184	0.793
Mediation		3.491	512.958	0.806

To gain a deeper understanding of the potential mediation impact of AT, the total effect, indirect effect, and direct effect of the link between PU and PEU on BI via AT were analyzed, as shown in Table 6.

Table 6. Total effect, indirect effect, direct effect, and result of the mediation effect.

Relationship	Total Effect	Indirect Effect	Direct Effect	Effect
PU–AT–BI	0.465, $p = 0.01$ LB = 0.213 UB = 0.751	0.463, $p = 0.01$ LB = 0.216 UB = 0.711	0.000, not sig.	Full mediation
PEU–AT–BI	0.444, $p = 0.01$ LB = 0.189 UB = 0.681	0.429, $p = 0.01$ LB = 0.183 UB = 0.707	0.000, not sig.	Full mediation

LB: lower bounces, UB: upper bounces.

The total effect between PU–AT–BI is significant with $\beta = 0.465$, $p < 0.05$, LB = 0.213, and UB = 0.751 according to the bootstrap analysis of mediation. The total effect of PEU–AT–BI is also significant ($\beta = 0.444$, $p < 0.05$, LB = 0.189, and UB = 0.681). This suggests that PU, PEU, and AT have an effect on BI, implying that mediation is conceivable. Consequently, the test also examines the indirect effect of the linkages. For the indirect effect, AT gives impact in relationships between PU and BI ($\beta = 0.463$, $p < 0.05$, LB = 0.216, and UB = 0.711) as well as PEU and BI ($\beta = 0.429$, $p < 0.05$, LB = 0.183, and UB = 0.707). In summary of the mediation analysis, AT is the full mediator of the interactions between PU and PEU and BI.

5. Discussion

The aim of this research is to comprehend the acceptance of e-wallets among Gen Z based on the implicit theories of TAM, SDT, and self-efficacy. When attempting to comprehend the acceptance of FinTech applications such as e-wallets, motivation has been overshadowed for a very long time. Self-efficacy is also absent from the highlight, despite the fact that both motivation and self-efficacy have been reported to influence human acceptance of other types of technology [76,119]. This research investigates these research gaps. SDT, comprising IM, IR, ID, and A, was integrated into TAM via PU and PEU in order to comprehend the effect of motivation. Two constructs, SE by Bandura and DMSE by Hammer, Scheiter, and Sturmer [91], were incorporated into TAM as predictors of both PU and PEU to comprehend self-efficacy. This work not only fills in research gaps regarding Gen Z's acceptance of e-wallets but also knowledge gaps regarding TAM [87], SDT [64], and self-efficacy [85].

To fully comprehend Gen Z's acceptance of e-wallets, the mediation effect of AT is also being explored. We performed a mediation analysis of the influence of AT on the relationship between PU and PEU and BI. All of the statistical analyses of CFA, Measurement Model, Structural Model, and bootstrap mediation analysis led to the testing of all hypotheses and the mediation effect. Out of 16 hypotheses being tested, 9 of them are supported. The conclusion of the study is depicted in the Model of E-Wallet Acceptance among Gen Z as seen in Figure 3.

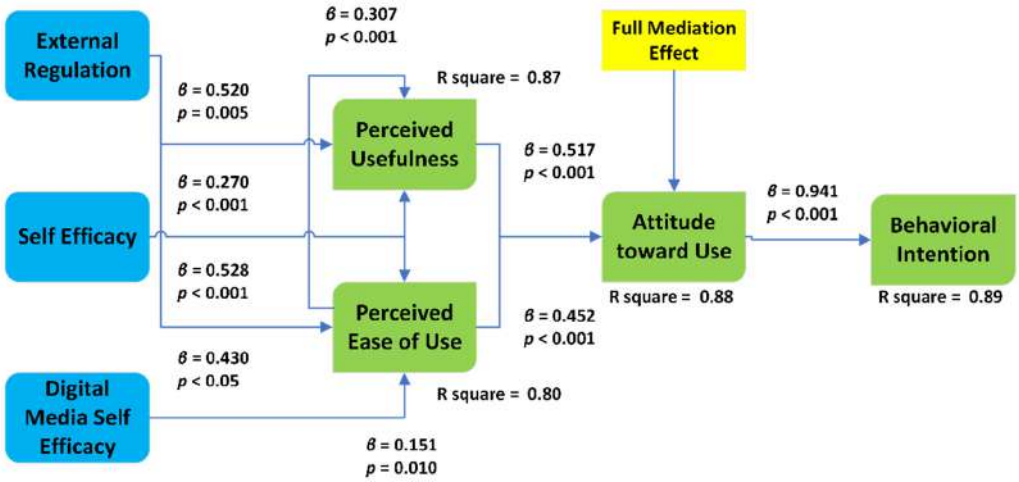

Figure 3. The Model of E-Wallet Acceptance among Gen Z.

The result indicates that the model can explain 89% of the variance in Gen Z's acceptance of e-wallets. This indicates that just 11 percent remain unexplained by the model, which surpasses the basic TAM model [81] and subsequent TAM-based research [120,121]. All the main relationships in TAM are supported by hypotheses 13 (PU to AT), 14 (PEU to AT), and 15 (AT to BI). AT serves as a mediator between PU and PEU and BI, which acts as a full mediator. This contradicts the previous finding [120]. AT was suggested to be omitted from TAM due to its limited involvement in mediating the links between PU and PEU to BI [122]. The limited mediation of AT may be attributable to the familiarity of the test subjects with the technology being evaluated. As emerging technologies such as AI [123], robots [124], and VR [125] suggest, AT will reappear as a mediator for BI. E-wallet is a relatively new technology in FinTech which would validate our conclusion that AT is pivoted as a full mediator. PU remains the most significant predictor of AT ($\beta = 0.517$) compared to PEU ($\beta = 0.452$), which is in-line with other research [126]. This implies that e-wallet providers and FinTech-related stakeholders should ensure that Gen Z perceives e-wallets as useful and necessary in order to achieve a high level of acceptance among them. For Gen Z to accept this innovation, e-wallets must be user-friendly and simple to operate. The ease of use of e-wallets also contributes to the perception of e-wallets'

usefulness but only to a small degree, $\beta = 0.307$, contradicting findings about the effect of PEU on PU in higher education but interestingly involving Gen Z in the context of IoT and smart classroom [127]. Research in digital comics [128] and digital mental healthcare [129] supports our finding. We infer this is because the Gen Z PEU will only influence their PU's viewpoint toward a technology if they appear to have a powerful incentive to use it, such as the hedonic feeling of digital comics, the need to remain healthy for digital mental healthcare, the urgency to use virtual learning environment [130], and the desire to complete digital transactions for our e-wallets context.

The research indicates that only the relationship between ER and PU and PEU is significant from the standpoint of SDT. This implies that Gen Z utilizes e-wallets due to external circumstances rather than their own self-motivation, as indicated by IM. Where IM represents activities undertaken because of intrinsic enjoyment [72,131], the absence of IM function as a predictor of acceptance may suggest that e-wallet usage is driven by external factors. This inference is supported by fact that ER which is part of external motivation positively influences PU ($\beta = 0.520$) and PEU ($\beta = 0.430$). This conclusion somewhat corroborates earlier research regarding the acceptance of technology-enhanced learning among Gen Z-dominated university students [99]. This observed that Gen Z's embrace of e-wallets is mostly impacted by their desire for externally controlled rewards [131]. It also suggests that the acceptance of e-wallets is less self-directed and more toward controlled motivation, resulting in low levels of motivation. Consistent with Chen and Zhao's [75] assertion that university students who are physically members of Gen Z regarded their controllable motivation to be significant in terms of how they viewed the usefulness and usability of a mobile application. We believe that the widespread use of e-wallets at retail locations, the inconvenient nature of utilizing fiat currency, and the efficacy of digital transactions as compared to non-digital transactions are the primary drivers of e-wallets' acceptance. We suggest that, for e-wallet providers and policy makers, to increase the acceptance of e-wallets, particularly among Gen Z, the availability of e-wallets, such as all outlets or business premises providing e-wallet facilities, and other contributing factors such as good Internet access and an excellent mobile application interface of the e-wallet would aid in the acceptance of this new FinTech technology.

Self-efficacy is a cognitive locus of operation that influences whether or not an individual's coping activity is initiated and influenced by an emotional source [69]. In this work, self-efficacy is offered as an external variable that influences the PU and PEU of samples. In accordance with the literature [127,132], the sophisticated statistical analysis undertaken revealed that all self-efficacy-related hypotheses are valid. The substantial SE-PEU link was also noted in the literature [133]. Prior studies indicate that measures of self-efficacy, such as computer self-efficacy, contribute to higher BI in adolescents' technology acceptance [134]. Our research indicates that the correlations between SE and PU and PEU are favorably significant ($\beta = 0.270$, $p < 0.001$; $\beta = 0.528$, $p < 0.001$), lending support to this position. The conclusion supports Bandura's [69] primary premise that human conduct is influenced by their expectation of efficacy. Therefore, for e-wallets to be widely accepted, potential users must have a high level of self-efficacy in performing the associated digital transaction task. This paradigm of efficacy can be enhanced by providing a mobile application for e-wallets with an intuitive user interface and a solid infrastructure to support the essential technology.

Lack of research on DMSE, a new form of self-efficacy, is one of the research gaps in self-efficacy. Only a few studies on DMSE have been undertaken [91–93]. As a result of a lack of attention, the role and amplitude of DMSE in relation to technology acceptance in the context of e-wallets and beyond, as well as engaging Gen Z as the sample or a broader age range, are unknown. This is the fourth study on DMSE that significantly contributes to the growing body of literature on this knowledge gap. In this study, DMSE was classified in the same category as SE as an external factor of TAM by predicting the PU and PEU of samples. DMSE influences the acceptance of e-wallets among samples by predicting their perception of the wallet's functionality, however, at a weak magnitude, $\beta = 0.151$,

$p < 0.05$. In essence, SE is more influential than DMSE in predicting acceptance, indicating how efficient Generation Z is at using the e-wallet in terms of their ability to adapt to the digital transaction ecosphere, infrastructure, and technological support is more significant than their acquaintance with gadgets such as the smart phone and tablet.

5.1. Theoretical Contributions

This research makes numerous substantial contributions to the theoretical viewpoint and the growth of knowledge. First, this research study focuses on the acceptance of e-wallets from the tacit of TAM among Gen Z, a subject that has not yet been adequately studied or understood. To date, little is documented about the factors that impact Gen Z's acceptance of e-wallets. It contributes further to the advancement of this paradigm as a robust theory applicable to technologically oriented social science research. Our findings imply a better theoretical grasp of e-wallet acceptance among Gen Z, but significant growth outside this age group is also conceivable. By including SDT, SE, and DMSE into TAM, it is possible to increase theoretical underpinnings of how motivational factors, which were originally overlooked in TAM due to cognitive nature, might improve human acceptance of technology, in this case, e-wallets. This study is also an attempt to integrate SDT with other appropriate theories, and it demonstrates the viability of such an integration. This research also contributes directly to the theoretical extension of TAM, SDT, and self-efficacy by enhancing the literature on these topics. Eventually, this research produced the Model of E-Wallets Acceptance among Gen Z, which might aid the FinTech industry in developing strategies for future e-wallet rollouts and serve as a starting point for future R&D as the factors that influence the acceptance of e-wallets are explained by the model. The novel new model will have an impact on future research into the user acceptance of FinTech services.

5.2. Practical Contributions

Having a strategy for enabling the efficient rollout of e-wallets is crucial, particularly for the FinTech industry. Consequently, a data-driven strategy must be used to formulate an effective plan for an efficient rollout endeavor. Our findings, particularly the Model of E-Wallet Acceptance among Gen Z, might very well play a pivotal role in enabling the FinTech industries in formulating the strategic approach.

The e-wallet ecosystem should be seen as user-friendliness first and foremost, especially by users. This argument was supported by the considerable influence of SE on PU, $\beta = 0.270$, and PEU, $\beta = 0.528$. The technology involved, such as the mobile application, banking connection, and the transaction medium, should be user-friendly from the outset. Instead of establishing a new platform to enable e-wallet technology, such as a new mobile application, we propose that the existing platform be retrofitted to accommodate the e-wallet technology. As the technology being implemented is not new and the users have extensive experience with it, it would enable the users to have a better self-efficacy. This notion is also reinforced by the result that PEU is a significant determinant of PU, $\beta = 0.307$, and AT, $\beta = 0.452$. This implies that the ease of use of the e-wallet will have a significant impact on how Gen Z customers perceive the utility of the e-wallet initiative.

To boost the acceptance of e-wallets, the implementation of ER-related incentives such as discounts, subsidies, coupons, and tokens could be effective. As a result, practicality is affected by the need to offer such incentives. Our recommendation is based on the fact that our model demonstrated ER to be a predictor of Gen Z e-wallet PU, $\beta = 0.520$, and PEU, $\beta = 0.430$. This suggestion is also supporting the findings of earlier studies [38].We conclude that the implication of this study for the practical application of e-wallets is the need for FinTech-related industries to ensure the user-friendliness of the e-wallet ecosystem, to expand the existing platform to accommodate e-wallet facilities, and to use an appropriate incentive to accelerate the acceptance of e-wallets.

6. Limitations and Recommendations for Future Research

We would also like to note this study's shortcomings. The variance of the model for BI is 89 percent, indicating that 11 percent of the variance cannot be explained by the model. This indicates that a tiny fraction of the factors that influence Gen Z's acceptance of e-wallets require further investigation. The same is true for PU and PEU, which require an additional 13% and 20% exploration, respectively. This deficiency could be addressed by including more theory as an external variable [87]. Lastly, another limitation is that convenience sampling may have flaws that impair the generalizability of the results. Resultantly, there is a chance that our findings do not apply to other age brackets, although for Gen Z, we observe numerous similarities with prior studies. However, it has been confirmed that the sample size is sufficient for Covariance-based Structural Equation Model analysis [114]. However, future research could gain ground due to the limitations of our study. For instance, random sampling could be able to overcome the shortcomings of this study [135], but it would be difficult to ensure that the samples have actual experience with e-wallets and are within the appropriate age range to represent Gen Z. In addition to cognitive (PU and PEU), affective (SDT), and behavioral (BI) perspectives, psychomotor remains underdeveloped. Additional theories or models that might reflect psychomotor paradigm could be advantageous.

7. Conclusions

E-wallets are widely accepted by Gen Z, with their perception of the use of e-wallets governed by the extent to which they perceive e-wallets to be practical (PU–AT, $\beta = 0.517$, $p < 0.0001$) and convenient to use (PEU–AT, $\beta = 0.452$, $p < 0.0001$), as mediated by their attitude toward utilizing the technology (AT–BI, $\beta = 0.941$, $p < 0.0001$). ER ($\beta = 0.520$; $\beta = 0.430$) and SE ($\beta = 0.270$; $\beta = 0.528$) are the factors that influence Gen Z's view toward e-wallet usefulness and ease to use perception about e-wallets. DMSE, on the other hand, solely has a function in determining PEU, $\beta = 0.151$. Which demonstrated that external reward and self-efficacy in e-wallet use are more influential than individual efficacy in using digital devices, based on the greater influence played by these factors at β values between 0.2 and 0.5 compared to the relatively low influence of DMSE at β values less than 0.2. To achieve an effective e-wallet strategy, the FinTech industries should emphasize the advantages afforded by this digital transaction and the familiarity of clients with the e-wallet. The attitude of Gen Z toward technology is also crucial for e-wallet widespread use and adoption, $\beta = 0.941$.

This study's Model of E-Wallet Acceptance among Gen Z may be very impactful for FinTech ecosystem and academic research. To ensure the success of e-wallet rollout initiatives, notably among Gen Z, their favorable attitude toward technology must be ensured, the e-wallet ecosphere must be conducive and not burdensome for the users, and external rewards would encourage usage of the technology. Before e-wallets might be adopted by users, they must be perceived as valuable and easy to use. As our new model expands TAM to include the affective component of motivation as well as self-efficacy, it may serve as a catalyst for future study.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki.

Informed Consent Statement: Samples has given their consent right before participating in this study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Items, variables, and references for the instrument.

Variable	Item	Questionnaire Item	Reference
IM	IM1	Because I think that using e-wallet is interesting	[136]
	IM3	Because using e-wallet is fun	
	IM4	Because I feel good when using e-wallet	
IR	IR1	Because I am using e-wallet for my own good	[136]
	IR2	Because I think using e-wallet is good for me	
	IR3	Using e-wallet is my personal decision	
ER	ER1	Because I am supposed to use e-wallet	[136]
	ER2	Because using e-wallet is something that I have to do	
	ER4	Because I feel that I have to do it	
Amotivation	A1	There may be good reasons to use e-wallet, but personally, I don't see any	[136]
	A2	I do use e-wallet, but I am not sure if it is worth it	
	A3	I don't know, I don't see what using e-wallet brings me	
SE	SE1	I could complete the e-wallet-related task if no one is there to assist me by demonstrating how to use it.	[90]
	SE3	I could complete the e-wallet-related task if I had only the mobile application manual as reference	
	SE4	I could complete the e-wallet-related task if I had seen someone else using it before trying it myself	
	SE5	I could complete the e-wallet-related task if I could be assisted if I had problem using it	
	SE6	I could complete the e-wallet-related task if someone else had help me get started	
	SE7	I could complete the e-wallet-related task if I have time to interact with it	
	SE8	I could complete the e-wallet-related task if I had previously performed a nearly identical task	
DMSE	DMSE1	I am competent at using digital devices such as computer, laptop, smartphone, and tablet	[91]
	DMSE2	I am competent at using digital devices that I am less familiar with	
	DMSE3	If my friends or relatives wish to purchase digital devices such as a computer, laptop, smartphone, or tablet, I am able to advise them	
	DMSE5	If there is a problem with a digital device, I think I can solve it.	
	DMSE6	If my friends or relatives have a problem with a digital device, I can help them.	
PU	PU1	Using e-wallet enables me to complete my daily routine more quickly	[81]
	PU2	Using e-wallet would improve my daily life performance	
	PU3	Using e-wallet would increase my productivity	
	PU4	Using e-wallet would enhance my effectiveness of my daily life	
	PU5	Using e-wallet would make it easier for me to perform my daily task and process	
	PU6	Overall, I feel e-wallet is beneficial	

Table A1. *Cont.*

Variable	Item	Questionnaire Item	Reference
PEU	PEU1	Learning to use e-wallet would be easy for me	[81]
	PEU2	My interaction with e-wallet would be clear and understandable	
	PEU3	It would be easy for me to become skillful at using e-wallet	
	PEU4	I would find e-wallet to be flexible to interact with	
	PEU5	I would find it easy to get e-wallet to do what I want it to do	
	PEU6	I would find e-wallet easy to use	
BI	BI1	I intend to use e-wallet in the future	[137,138]
	BI2	If I have access to e-wallet, I intend to use it	
	BI3	I intend to use e-wallet in the future for daily purposes	
	BI4	Assuming I have access to e-wallet, I intend to use it	
	BI5	I will frequently use e-wallet in the future	
	BI7	I would like to use many different forms of e-wallet for learning in the future	
	BI8	It is worth to use e-wallet	
	BI9	In the future, I intend to use e-wallet	
AT	AT1	I am enthusiastic about using the e-wallet in my daily life	[137–139]
	AT2	I think it is a good idea to use the e-wallet for my daily life usage	
	AT3	I like to use e-wallet	
	AT5	I am looking forward to use e-wallet	

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