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Digital Payments and Financial Vulnerability among Generation Z: A Systematic Review of Risk Mechanisms and Protective Factors

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Abstract. Digital payments may expand access to financial services while also exposing users to spending and credit-related risks. This article examines the mechanisms proposed to connect digital payments to financial vulnerability and the factors that may protect Generation Z (Gen Z). A structured, non-exhaustive literature review was conducted on 24 October 2026 using predefined keyword blocks, title- and DOI-based searches, publisher records, and institutional repositories; screening was performed by a single reviewer, and the text accessibility of each source is reported. Sixteen sources (13 primary studies and three syntheses) were mapped and classified as Gen Z-specific evidence or comparator evidence from adult, young-adult, and household populations. Only three primary studies used Gen Z samples, and none of them measured digital payment use in relation to financial vulnerability. Comparator evidence does not support treating digital payment adoption as an invariably harmful exposure: objective fragility and subjective worry do not necessarily move together, and higher cashless spending is not, by itself, evidence of financial distress. Overspending, deferred credit obligations, and combined exposure to digital credit and social media are therefore treated as candidate risk pathways for Gen Z rather than established effects. Financial literacy, self-control, saving habits, and financial management behavior are associated with financial behavior or well-being, mainly in cross-sectional studies, and do not yet establish causal protection against vulnerability. The article proposes an exposure–mechanism–vulnerability–protection framework as a set of testable propositions, and a research agenda separating payment instruments from credit facilities. Conclusions are limited by non-exhaustive searching, uneven full-text access, single-reviewer screening, and the absence of a formal risk-of-bias assessment; the review does not claim full PRISMA compliance.

Keywords: Digital Payments; Financial Literacy; Financial Vulnerability; Generation Z; Self-Control.

1. INTRODUCTION

Everyday financial decisions increasingly take place through digital devices. Transactions can be completed within seconds, while a range of funding options is presented within closely adjacent interfaces (Sukma et al., 2026). For financial management research, the issue extends beyond users' willingness to adopt applications. A more fundamental question is whether such convenience helps users meet their needs and cope with shocks, or whether it is instead associated with spending that is difficult to control. The reviews by Behera and Kumra (2024) and Ha et al. (2025) provide a basis for shifting attention from adoption toward the consequences of service use.

Generation Z is a relevant group for investigation, yet it should not be treated as a homogeneous population (Andriansyah et al., 2026). University students who still receive allowances face a different decision space from young workers who bear their own living costs. Suprapto et al. (2025) examined Gen Z in Batam, whereas Sutejo et al. (2026) focused on income-earning Gen Z. This difference indicates that income status and the stage of financial independence need to be recorded when findings are compared. Results obtained in one group do not automatically represent the entire generation.

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Evidence on the relationship between digital payments and financial vulnerability is also not uniformly directional. In Norway, Seldal and Nyhus (2022) observed lower financial vulnerability among people who paid by mobile phone than among those who did not. Xu and Zhang (2025) reported reduced vulnerability among rural households in China. Neither study provides evidence specific to Gen Z, but both serve as important counterpoints to the assumption that the digitalization of payments invariably worsens users' conditions. Differences in context and in vulnerability measures need to be examined before such results are combined.

Divergent directions may even emerge within the dimensions of vulnerability itself. Using data from 122,717 adults across 139 economies, Liu et al. (2026) observed that adopters of digital payments tended to have lower financial fragility. For financial worry, however, the sign depended on the level of analysis: adoption went together with more worry among individuals but, on average, with less worry across countries. These findings show that the capacity to meet emergency needs is not the same as a sense of security about one's financial condition. Conclusions about vulnerability may therefore change when the indicators and the level of analysis change.

On the risk side, research on cashless payments and digital credit offers reasons to attend to spending and future obligations. The meta-analysis by Schomburgk et al. (2024), covering 392 effect sizes from 71 papers, reports a small but significant tendency toward higher spending with cashless payments. Kumar et al. (2024) also examined changes in purchasing following the adoption of buy now, pay later (BNPL) services. However, increased spending does not by itself demonstrate a decline in the ability to pay. The links among service exposure, transaction behavior, and financial difficulty need to be explained through distinct indicators.

The novelty of this article lies in mapping risk and protective mechanisms on the basis of four distinctions. First, payment instruments are separated from funding sources and credit facilities. Second, objective vulnerability is distinguished from subjective distress. Third, evidence on Gen Z is positioned separately from evidence on other populations. Fourth, associations observed in cross-sectional data are distinguished from evidence that can support causal interpretation. Building on these distinctions, the review seeks to answer three questions: (1) how digital payments relate to financial vulnerability and how directly the available evidence applies to Gen Z; (2) which mechanisms have been proposed to explain potential risks; and (3) how strongly the literature supports factors that may protect users. The expected contribution is a framework of testable propositions that can inform the design of further research with more clearly specified relationships among constructs.

2. THEORETICAL REVIEW

Financial Vulnerability as a Multidimensional Condition

Financial vulnerability refers to limitations in sustaining financial functioning when facing pressures or needs that cannot be postponed. In this review, the objective dimension encompasses difficulties in obtaining emergency funds, paying bills, and maintaining adequate resources. The subjective dimension encompasses perceived worry and stress. This distinction follows the measurement issues evident in the studies of Seldal and Nyhus (2022) and Liu et al. (2026). The two dimensions are related, but they are not treated as interchangeable measures.

Financial well-being and financial vulnerability are likewise not entirely identical as two ends of a single scale. Research on well-being can help explain the factors that support money management, but its findings do not directly constitute evidence of reduced arrears or increased emergency savings. Sabri et al. (2024), for example, show that how young Malaysian adults handle money is related to their reported financial well-being. In this article, that study is used as supporting evidence for a protective pathway. Such use nonetheless requires acknowledging that the original outcome variable was well-being rather than financial vulnerability in all its forms.

Digital Payments and Transaction Funding Sources

Digital payments are understood as electronic means of transferring funds or settling transactions. Their funding may derive from the user's own balance or from a credit facility (Dellon et al., 2026). This distinction matters because a single application may provide more than one function. The use of a balance primarily concerns the allocation of available funds, whereas credit additionally creates obligations in future periods. Evidence from BNPL studies is therefore treated as a separate group rather than generalized as a characteristic of all digital payments.

The mental accounting perspective explains how individuals categorize money and evaluate transactions according to particular categories (Thaler, 1985). As a conceptual application, funds for spending, savings, and instalments can be understood as accounts whose interrelationships need to be maintained. Fast payment does not necessarily eliminate budget boundaries, but it may require different forms of monitoring. The relationship between the allocation of funds within an application and the assessment of one's capacity to pay remains an empirical question (Kuncara et al., 2026). This article uses the theory to construct plausible mechanisms without assuming that all users are subject to the same bias.

Financial Literacy and Self-Control as Potential Sources of Protection

Financial literacy provides a foundation for understanding costs, risks, and the consequences of choices. Using U.S. survey data, Ahn and Nam (2022) reported that financial knowledge moderated the association between mobile payment use and problematic spending behavior. Abdurrahman and Nugroho (2024) extended the discussion to digital literacy, financial technology, financial confidence, and behavior. However, the ability to operate an application is not automatically equivalent to the ability to assess the sustainability of cash flow (Ananto & Wahongan, 2026). Accordingly, the synthesis needs to distinguish among technical skills, objective financial knowledge, and self-assessed ability.

Self-control concerns the capacity to sustain goal-consistent action, including when confronted with consumption impulses. Boto-García et al. (2022) associated it with saving habits, while Hafizha and Arifin (2025) reported an association between self-control and students' financial behavior. Within the framework of this review, protection is not merely an individual trait but also observable action, such as adhering to a budget and setting aside reserves. Conceptually, literacy may assist in evaluating choices, whereas self-control may support their implementation. Both functions are nevertheless treated as hypothesized relationships that need to be examined according to the context of the evidence.

3. RESEARCH METHOD

Review Design

This study employed a structured, non-exhaustive literature review with a narrative synthesis. The design followed the principles of transparency in source selection and traceability of argumentation set out by Snyder (2019) and Paul et al. (2021). PRISMA 2020 was used as a reporting reference rather than as a claim that all of its items were fulfilled (Page et al., 2021). Accordingly, the manuscript is presented as a bounded evidence synthesis and not as a comprehensive systematic literature review (SLR): the protocol was not registered, screening was conducted by a single reviewer, and no formal risk-of-bias assessment was performed. The procedures below are reported in enough detail for the search to be repeated and for its boundaries to be judged.

Information Sources and Search Strategy

Searching and source verification were conducted on 24 October 2026 through web searches, supplemented by searches of publisher websites and institutional repositories, and by author-provided copies of articles. Scopus and Web of Science were not accessed directly. The search terms were organized into four blocks (Table 1): (A) payment exposure, (B)

vulnerability outcomes, (C) the target population, and (D) protective factors. Terms within a block were combined with OR, and terms from different blocks were combined with AND. Blocks A and B located evidence on the core relationship, Block C located Gen Z-specific studies, and Block D located evidence on protective factors. Title- and DOI-based searches were then used to retrieve the version of record and to verify bibliographic metadata. Substantive evidence was restricted to publications from 2022 to 2026, whereas older sources were used only for theory and method.

Table 1. Search blocks and combinations

Block	Concept	Terms (combined with OR within a block)
A	Payment exposure	"digital payment" OR "mobile payment" OR "buy now pay later"
B	Vulnerability outcome	"financial vulnerability" OR "financial fragility" OR "financial worry"
C	Target population	"Generation Z"
D	Protective factors	"financial literacy" OR "self-control"
Combination	Across blocks	Blocks combined with AND (e.g., A AND B; A AND C; C AND D), followed by title- and DOI-based verification of candidate records

Source: Author's search protocol.

Eligibility Criteria, Screening, and Source Accessibility

The eligibility criteria are summarized in Table 2. Gen Z-specific studies were used to assess relevance to the target group, while studies of adults, young adults, and households served as comparators. Reviews and meta-analyses were used as secondary sources of synthesis rather than counted again as additional primary studies. Publications that addressed only intentions to use applications were not treated as direct evidence of vulnerability.

Table 2. Eligibility criteria.

Criterion	Included	Excluded
Publication type	Peer-reviewed journal articles, meta-analyses, and systematic or structured reviews	News, blogs, commercial reports, and other non-scholarly sources
Period	2022–2026 for substantive evidence; earlier works for theory and method only	Substantive evidence published before 2022
Topic	Digital payments or digital financial services in relation to vulnerability, financial distress, spending, credit, or protective financial behavior	Studies addressing only adoption intention or technology acceptance
Population	Gen Z-specific samples (target evidence); adult, young-adult, mixed-age, and household samples (comparator evidence)	Firm-level or institution-level samples without individual or household outcomes
Language	English	Other languages

Source: Author's review protocol.

Relevance was judged first from titles and abstracts and then from the fullest version of each record available to the author. Screening was performed by a single reviewer, and record counts at each stage were not documented in a verifiable form. A PRISMA flow diagram with verified counts therefore cannot be provided, and the evidence map should not be read as an exhaustive census of the literature. Because the search relied on openly accessible sources, it may over-represent open-access and English-language publications and may have missed studies indexed only in subscription databases.

Text accessibility was recorded for each mapped source (Table 3). Open-access versions of record and repository copies were read in full. For subscription articles, extraction was restricted to the official abstract and metadata, supplemented by the full text only where an author-provided or institutional copy was obtained. For sources examined only at abstract level, findings are reported at the level of their stated direction of association, and no detailed assessment of instruments, statistical controls, or effect magnitudes is claimed.

Data Extraction, Evidence Classification, and Synthesis

Data extraction recorded the authors and year, population and setting, sample size, design, type of service or funding source, outcome dimension, reported direction of association, and limits of inference. Each source was then classified on two dimensions. The first was directness to Gen Z: Gen Z-specific evidence refers to samples explicitly defined as Generation Z, and comparator evidence refers to adult, young-adult, mixed-age, or household samples in which Gen Z was not analyzed separately. The second was the design basis for causal interpretation: cross-sectional surveys were treated as associational evidence; quasi-experimental designs, repeated survey waves, and matching as stronger but still context-bound evidence; and meta-analyses of randomized experiments as the strongest basis, limited to the outcomes they measured. The reference list contains the sources underpinning the manuscript, including those on theory and method.

The analysis was conducted by grouping findings into risk pathways, protective pathways, and contextual conditions. Differences in indicators, funding sources, and populations were used to explain variation in results. Coefficients and effect sizes were not pooled because the constructs and designs were heterogeneous. Studies reporting positive, negative, or non-significant associations were all retained and considered in light of their research questions and models. Statements about Gen Z in the results are drawn only from Gen Z-specific evidence; comparator evidence is used to identify candidate mechanisms that still require testing in Gen Z samples.

4. RESULTS AND DISCUSSION

Characteristics of the Evidence Base and Directness to Generation Z

Table 3 summarizes the sixteen sources in the evidence map: thirteen primary studies and three secondary syntheses (two meta-analyses and one review). Only three primary studies, namely Hafizha and Arifin (2025), Suprapto et al. (2025), and Sutejo et al. (2026), used samples explicitly defined as Gen Z. All three were Indonesian cross-sectional surveys, and their outcomes were financial behavior and financial well-being. None of them measured digital payment use as an exposure or financial vulnerability as an outcome.

Table 3. Characteristics, Evidence Class, and Text Access of the Mapped Sources.

Source	Population and setting	Design	Evidence class	Text access
Gen Z-Specific Primary Studies				
Hafizha and Arifin (2025)	185 university students (Gen Z), Indonesia	Cross-sectional survey; multiple regression	Gen Z-specific	Open-access journal
Suprapto et al. (2025)	415 Gen Z respondents, Batam, Indonesia; convenience sample	Cross-sectional survey; PLS-SEM	Gen Z-specific	Open access (CC BY 4.0)
Sutejo et al. (2026)	612 income-earning Gen Z respondents, Indonesia	Cross-sectional survey; PLS-SEM with multi-group analysis	Gen Z-specific	Open access (CC BY 4.0)
Comparator Primary Studies				
Seldal and Nyhus (2022)	2,202 adults, Norway (representative sample)	Cross-sectional survey	Comparator	Open access (CC BY 4.0)
Liu et al. (2026)	122,717 adults in 139 economies	Cross-sectional; multilevel models	Comparator	Open access (CC BY 4.0)
Xu and Zhang (2025)	Rural households, China (CHFS 2017 and 2019)	Household survey waves; propensity score matching and robustness checks	Comparator	Open access (CC BY 4.0)
Ahn and Nam (2022)	21,457 adults, United States (2018 NFCS)	Cross-sectional survey; moderation analysis	Comparator	Subscription; abstract and metadata only
Kumar et al. (2024)	Customers of an online retailer	Transaction data; synthetic difference-in-differences	Comparator	Open access (CC BY 4.0)
Donou-Adonsou and Leslie-Piper (2026)	U.S. consumers and households	Observational survey data	Comparator	Open access (CC BY-NC-ND 4.0)
Abdurrahman and Nugroho (2024)	356 adult users of digital financial services, Greater Jakarta; 42% aged 18–29	Cross-sectional survey; CB-SEM	Comparator (mixed age)	Open-access journal
Sabri et al. (2024)	360 young adults, Malaysia	Cross-sectional survey; mediation analysis	Comparator (young adults)	Free to read (publisher and PubMed Central)
Boto-García et al. (2022)	Adult sample; Gen Z not analyzed separately	Observational survey	Comparator	Repository postprint (open)
Schomburgk and Hoffmann (2023)	275 consumers, Australia	Cross-sectional survey; PLS-SEM	Comparator	Subscription; abstract and metadata only

Secondary Syntheses				
Schomburgk et al. (2024)	392 effect sizes from 71 papers	Meta-analysis	Comparator	Open access (CC BY 4.0)
Kaiser et al. (2022)	76 randomized experiments; more than 160,000 participants	Meta-analysis of randomized experiments	Comparator	Subscription; abstract and metadata only
Pandey et al. (2026)	66 articles from Web of Science and Scopus	Literature review	Comparator	Subscription; abstract and metadata only

Source: Author's synthesis. PLS-SEM = partial least squares structural equation modeling; CB-SEM = covariance-based structural equation modeling; CHFS = China Household Finance Survey; NFCS = National Financial Capability Study.

This distribution has a direct consequence for interpretation. All of the evidence on the core relationship between digital payments and vulnerability is comparator evidence, drawn from adult, mixed-age, young-adult, and household samples in Norway, the United States, China, Australia, Malaysia, Indonesia, and multi-country data. Two comparator studies report age gradients relevant to younger users: Seldal and Nyhus (2022) found higher vulnerability among younger Norwegians, which was unrelated to their use of mobile payments, and Kumar et al. (2024) found the spending effect of BNPL adoption to be weaker among older customers. These gradients indicate relevance to younger users but are not Gen Z estimates.

In terms of design, most primary studies were cross-sectional. Only Xu and Zhang (2025), who used two survey waves with matching, and Kumar et al. (2024), who used a synthetic difference-in-differences design, offer stronger, though still context-bound, grounds for causal interpretation. Kaiser et al. (2022) is the only source that synthesizes randomized experiments, and its outcomes are financial knowledge and behaviors rather than vulnerability. Consequently, the risk pathways below are presented as mechanisms that require verification in Gen Z samples, and the protective pathways as associations whose relevance to digital payment vulnerability remains to be tested.

Risk Mechanisms and Differences in the Dimensions of Financial Vulnerability

The synthesis does not support a single, consistently directional relationship between digital payment use and vulnerability. The evidence needs to be read at the levels of service, behavior, and outcome. Table 4 shows that studies of vulnerability per se may yield patterns different from those of studies on spending or credit. Some studies used data on the general adult population, while others used customer transaction or household data. None of the studies in Table 4 used a Gen Z-specific sample. Accordingly, this evidence map serves to examine mechanisms that may be relevant to Gen Z, not to claim that its findings apply to Gen Z.

Table 4. Selected Comparator Evidence on Digital Payments and Risk Pathways.

Source	Reported evidence	Limits of application
Comparator evidence (no Gen Z-specific sample)		
Seldal and Nyhus (2022)	Survey of 2,202 Norwegian adults; vulnerability was lower among mobile payment users than among non-users; younger respondents were more vulnerable regardless of mobile payment use.	Not a Gen Z-specific sample; cross-sectional; the direction of association is not universal.
Liu et al. (2026)	Cross-country adult data; fragility and worry showed different patterns of association.	Individual and country levels are not interchangeable; cross-sectional.
Xu and Zhang (2025)	CHFS 2017 and 2019 data; digital payments associated with reduced vulnerability among rural households.	Context of rural households in China.
Ahn and Nam (2022)	U.S. survey data (2018 NFCS); mobile payment use associated with problematic spending, with financial knowledge moderating the association.	The spending relationship is not equivalent to all dimensions of vulnerability; cross-sectional.
Schomburgk et al. (2024)	Meta-analysis of 392 effect sizes supports a small tendency toward higher spending with cashless payments, which has weakened over time.	Increased spending does not demonstrate default.
Kumar et al. (2024)	BNPL adoption associated with larger online orders in a synthetic difference-in-differences analysis of retailer data; the effect was weaker among older customers.	Digital credit needs to be separated from balance-funded payments; purchase data do not measure repayment difficulty.
Donou-Adonsou and Leslie-Piper (2026)	Joint analysis of BNPL use, social media use, and financial stress in U.S. households.	Not an estimate specific to Indonesian Gen Z; observational design.

Source: Author's synthesis based on the publications cited in the table.

The first candidate risk mechanism is spending that exceeds plans or financial capacity. Evidence on the cashless effect provides grounds for attending to this process, but increases in purchase value need to be compared against income and needs. Larger purchases may still remain within budget. Vulnerability becomes a concern when users lose the capacity to meet other needs or to set aside reserves. Hence, a review that equates every increase in spending with financial hardship risks drawing conclusions that extend too far beyond the variables actually measured.

The second candidate mechanism concerns the separation between the timing of purchase and the timing of payment. Kumar et al. (2024) reported larger online orders following BNPL adoption in a quasi-experimental analysis. As an interpretation, instalment facilities may alter how users assess their purchasing capacity at the point of transaction. However, purchase data are insufficient to claim that users fall into arrears. Further research needs to record total obligations, due-date schedules, and the adequacy of cash flow. In this way, ease of financing can be distinguished from the accumulation of repayment burdens that may give rise to vulnerability.

The third candidate mechanism is concurrent exposure within the digital environment. Donou-Adonsou and Leslie-Piper (2026) analyzed how BNPL use and social media use, separately and in combination, relate to consumers' financial stress. That study broadens attention from a single product to the decision environment. Nevertheless, an observational study of U.S. households cannot be used to establish either a causal effect or the magnitude of risk for Indonesian Gen Z. This synthesis draws the lesson that joint exposure needs to be measured, while withholding conclusions about groups that were not specifically analyzed.

The distinction between objective and subjective vulnerability is an important conceptual distinction supported by comparator evidence (Liu et al., 2026). As an interpretive illustration, a person may find it easier to access funds when an emergency arises yet remain anxious about the next income. Such a situation need not be regarded as a contradictory result. Rather, it indicates that resources and perceptions of security may be governed by different explanatory processes. In measurement, emergency fund scores and worry should first be reported separately before being considered as a composite index.

Institutional context further limits generalization. The Norwegian findings of Seldal and Nyhus (2022) provide reason not to transfer conclusions from one country directly to another. Similarly, the evidence on rural households from Xu and Zhang (2025) points to possible benefits in a different setting. These studies are used as comparative evidence, not as estimates for university students or other Gen Z subgroups. The analytical implication is that information on income, account access, family support, and the service environment needs to be recorded when explaining why user risks differ.

The position of Generation Z in this synthesis is therefore specific and bounded. Because none of the Gen Z-specific studies measured digital payment exposure, the three mechanisms above are hypotheses for Gen Z rather than findings about it. Evidence on younger groups may indicate the relevance of the problem, but a generational label is not a self-sufficient explanation of behavior. Spending that is difficult to control needs to be explained through capabilities, resources, and transaction exposure. Using the Gen Z label without distinguishing among workers, students, and users who still depend on their families may in fact obscure the conditions that most strongly determine vulnerability. Further research should explicitly define respondents' age at the time of data collection.

Protective Factors and the Proposed Research Framework

Protective factors in this review are grouped according to their empirical support and their proximity to behavior. Table 5 presents sources addressing knowledge, self-control, money management, and interventions, separating Gen Z-specific from comparator evidence.

All three Gen Z-specific studies measure well-being or behavior rather than vulnerability, and none includes digital payment use. Accordingly, the term protection is used to denote hypothesized explanatory pathways with uneven support, not as a guarantee that improving each factor will necessarily reduce any form of financial hardship.

Table 5. Selected evidence on protective factors

Source	Findings or scope	Implications for the synthesis
Gen Z-specific evidence		
Hafizha and Arifin (2025)	185 students; financial behavior was linked to self-control and socialization but not to literacy.	Knowledge needs to be distinguished from behavioral enactment; cross-sectional.
Suprapto et al. (2025)	415 Gen Z respondents in Batam; self-control was related to well-being indirectly, via financial behavior.	Direct and indirect pathways need to be separated; statistical mediation is not a causal sequence.
Sutejo et al. (2026)	612 income-earning Gen Z respondents; behavior and stress formed part of the well-being model.	Income conditions limit the applicability of the results.
Comparator evidence		
Sabri et al. (2024)	360 Malaysian young adults; behavior mediated the relationship between financial factors and well-being.	Supporting evidence for the mechanism, not direct evidence on vulnerability.
Kaiser et al. (2022)	Meta-analysis of 76 randomized financial education experiments; positive average effects on knowledge and downstream behaviors.	Supports causal effects on knowledge and behavior, not on vulnerability outcomes; interventions need to be distinguished from literacy correlations.
Schomburgk and Hoffmann (2023)	275 Australian consumers; mindfulness, self-control, impulsive buying, and BNPL use (cross-sectional).	Psychological protection needs to be tested by product type.
Pandey et al. (2026)	Review of 66 articles on behavioral interventions in financial decision-making.	General evidence does not automatically demonstrate the effectiveness of specific payment features.

Source: Author's synthesis based on the publications cited in the table.

Financial literacy is a conceptually plausible protective factor when the skills it involves relate to the decisions being faced, but its empirical support is mixed. Understanding costs, repayment schedules, and the risk of late payment is more closely related to credit use than merely knowing application terminology. In comparator evidence, Ahn and Nam (2022) found that financial knowledge moderated the association between mobile payment use and overspending among U.S. adults; as a cross-sectional moderation result, this does not show that raising knowledge reduces overspending. Within the Gen Z-specific evidence, Hafizha and Arifin (2025) found that literacy was not significant, whereas the behavior of students in their sample was more closely related to self-control and socialization. This difference underscores the need to examine instruments and context before literacy is treated as an explanatory factor.

Digital literacy also needs to be separated from self-confidence that is not accompanied by competence. Abdurrahman and Nugroho (2024) treated digital literacy, financial confidence, and behavior as distinct constructs. This separation is useful for the development of vulnerability research. Users who are confident in managing payments do not necessarily have reserves when income is delayed. As a research proposal, measures of objective knowledge could be combined with questions about actual costs and the ability to read repayment schedules. The effectiveness of this proposal still needs to be tested rather than assumed from existing relationships among constructs.

Self-control is associated with financial behavior in the Gen Z-specific evidence, and it may offer protection through repeated behavior. The results of Suprapto et al. (2025) offer grounds for examining this link, since the direct relationship between self-control and well-being was not significant, whereas behavior acted as a mediator. In conceptual terms, the capacity to resist spending impulses becomes more meaningful when followed by budget maintenance and timely payment. Models that examine only direct relationships risk overlooking this process. However, statistical mediation in cross-sectional surveys does not establish a causal sequence in users' lives, and the outcome in that study was well-being rather than vulnerability.

Saving habits and financial socialization complement cognitive and psychological factors. Boto-García et al. (2022) found that financial socialization and self-control were associated with more regular saving. That evidence does not specifically concern Gen Z users of digital payments and is therefore used only as a basis for developing mechanisms. Family support may encompass learning about money but also varying sources of funds. Research needs to separate the two so that the influence of family education is not confounded with the amount of financial assistance received by respondents.

Protection at the service level cannot be adequately explained through user responsibility alone. Pandey et al. (2026) mapped interventions such as reminders, information presentation, and choice architecture in financial decision-making. Building on that mapping, spending summaries, due-date reminders, and transaction limits can be proposed as candidate payment interventions. This article does not claim that any of these features has been proven effective for Gen Z. Their feasibility needs to be examined through experiments comparing behavior and financial outcomes, including the possibility that users ignore notifications.

Financial education remains relevant, but evidence on its interventions needs to be interpreted according to study design. Kaiser et al. (2022) provide an experimental basis for the benefits of education for knowledge and behavior; this is the only source in the evidence map with a randomized basis, and it did not measure vulnerability. These results support the

design of learning that is connected to real decisions. In a campus context, exercises comparing balance-funded and instalment payments could be designed together with budget evaluations. However, success in raising knowledge scores should not be reported directly as a reduction in vulnerability if emergency funds, arrears, or subjective distress have not been measured.

The proposed framework links four groups of constructs. Exposure encompasses the type of service, transaction intensity, and funding source. Mechanisms encompass spending control and the accumulation of obligations. Vulnerability is separated into objective and subjective dimensions. Protection encompasses financial capability, self-control, money management habits, and service and environmental support. This structure is the author's interpretation of the literature, not a causal model that has been tested as a whole. The links between construct groups are propositions to be tested, not estimated effects; for Gen Z in particular, none of the links has yet been examined in a single study. Its purpose is to clarify the position of variables before new research is undertaken.

Table 6. Research agenda based on the synthesis framework.

Gaps to be Examined	Development Questions	Suggested Design
Dimensions of vulnerability	When does access to funds improve while worry continues to increase?	Panel with separate objective and subjective outcomes.
Transaction funding sources	Do balance-funded and credit-funded payments exhibit different risk pathways?	Transaction classification and total obligations.
Behavioral protection	Do changes in budgeting discipline precede changes in vulnerability?	Repeated measurement or experiments.
Service design	Do reminders or transaction limits reduce financial hardship?	Experiments with comparison groups.
Diversity within Gen Z	How do income and family assistance constrain risk?	Group comparisons using equivalent measures.

Source: Author's synthesis based on the publications cited in the table.

The agenda in Table 6 reflects verification needs, not a claim that none of its questions has ever been studied. The first priority is to ensure construct equivalence. The next priority is to establish a clearer temporal sequence among use, behavior, and outcomes. Usage indicators should not consist solely of transaction frequency, because the same figure may reflect spending on necessities as well as the use of credit. Combining transaction measures, resources, and financial outcomes enables models to describe users' conditions more accurately.

In practical terms, administrators of education programs can use this framework to separate objectives relating to knowledge, habits, and financial resilience. Service providers can use it as a basis for evaluation questions concerning the readability of costs and payment schedules. However, these recommendations are design implications, not evidence of the effectiveness of particular policies. The review by Ha et al. (2025) emphasizes the importance of real impact and protection in fintech research, while Schomburgk and Hoffmann (2023) illustrate the need to attend to the control of consumer decisions.

The main limitations lie in the non-exhaustive search, the lack of direct access to Scopus and Web of Science, uneven access to full texts, single-reviewer screening, and the absence of documented record counts and of a formal risk-of-bias assessment. The selection may therefore favor open-access and English-language publications. Gen Z-specific evidence is limited to three Indonesian cross-sectional studies that did not measure digital payment exposure, so conclusions about digital payment risk for Gen Z rest on comparator evidence. Survey-based findings are also not always able to distinguish user self-selection from the consequences of use, and mediation or moderation results describe associations within a model rather than causal sequences. These limitations weaken the basis for asserting either a causal effect or a universal magnitude of risk. The contribution of the manuscript is a mapping of relationships and evidentiary boundaries that can be strengthened through database searching, dual independent screening, full-text reading, and methodological quality appraisal in a full SLR.

5. CONCLUSIONS AND RECOMMENDATIONS

Within the boundaries of this non-exhaustive review, the available evidence suggests that the association between digital payments and financial vulnerability varies with funding source, user behavior, and the outcome indicator used. The comparator evidence does not support the assumption that adoption invariably worsens users' circumstances: objective fragility may move in a different direction from subjective worry, and increased spending is not synonymous with difficulty in paying. Overspending, credit obligations, and joint digital exposure are plausible risk mechanisms, but they were identified mainly in adult and household populations outside Indonesia and have not yet been tested directly in Gen Z samples.

Literacy, self-control, saving habits, and money management behavior are associated with better financial behavior or well-being, including in three Indonesian Gen Z samples. Because these studies were cross-sectional and did not measure digital payment exposure or vulnerability, the evidence does not show that strengthening these factors reduces the financial vulnerability of Gen Z digital payment users; the protective pathways in the proposed framework remain hypotheses. Randomized evidence is available only for the effect of financial education on knowledge and behavior.

Future research is recommended to sample Gen Z explicitly while recording income status and financial dependence, to separate balance-funded payments from credit, to measure objective and subjective outcomes separately, and to employ longitudinal or experimental designs. Further development of the review requires documented searches in Scopus and Web of Science, dual independent screening, a PRISMA flow diagram with verified counts, full-text access, and formal risk-of-bias assessment so that the proposed framework can be evaluated with greater evidentiary certainty.

REFERENCES

Abdurrahman, A., & Nugroho, D. A. (2024). The role of digital financial literacy on financial well-being with financial technology, financial confidence, financial behavior as intervening and sociodemography as moderation. *Jurnal Ekonomi dan Bisnis, 27*(2), 191–220. https://doi.org/10.24914/jeb.v27i2.11891

Ahn, S. Y., & Nam, Y. (2022). Does mobile payment use lead to overspending? The moderating role of financial knowledge. *Computers in Human Behavior, 134*, 107319. https://doi.org/10.1016/j.chb.2022.107319

Ananto, N., & Wahongan, M. (2026). Financial literacy and financial behaviour on investment decision making among Generation Z: The mediating role of financial attitude. *Lokawati: Jurnal Penelitian Manajemen dan Inovasi Riset, 4*(4), 245–253. https://doi.org/10.61132/lokawati.v5i4.2678

Andriansyah, M. F., Alamsyah, A. K., Khairunnisa, S., Zahratussyfa, K., Anjani, S. D., Makarim, Z. N., & Shodiq, J. (2026). Revolusi *cashless*: Analisis perubahan pola konsumsi dan *impulsive buying* pada Generasi Z. *Edusola: Journal Education, Sociology and Law, 2*(2), 2292–2302. https://publisherqu.com/index.php/edusola/article/view/4617

Behera, C. K., & Kumra, R. (2024). Two decades of mobile payment research: A systematic review using the TCCM approach. *International Journal of Consumer Studies, 48*(1), e13003. https://doi.org/10.1111/ijcs.13003

Boto-García, D., Bucciol, A., & Manfrè, M. (2022). The role of financial socialization and self-control on saving habits. *Journal of Behavioral and Experimental Economics, 100*, 101903. https://doi.org/10.1016/j.socec.2022.101903

Dellon, A. B. C., Retang, A. L., Triwijayati, A., & Hellyani, C. A. (2026). Peran QRIS dalam digitalisasi sistem pembayaran UMKM: Analisis manfaat dan hambatan. *Jurnal Manajemen Bisnis Era Digital, 3*(2), 1–13. https://doi.org/10.61132/jumabedi.v3i2.1324

Donou-Adonsou, F., & Leslie-Piper, N. (2026). Digital traps: The compounding impact of BNPL and social media on consumer financial stress. *Finance Research Letters, 93*, 109636. https://doi.org/10.1016/j.frl.2026.109636

Ha, D., Le, P., & Nguyen, D. K. (2025). Financial inclusion and fintech: A state-of-the-art systematic literature review. *Financial Innovation, 11*(1), Article 69. https://doi.org/10.1186/s40854-024-00741-0

Hafizha, A. I., & Arifin, Z. (2025). What drives Generation Z's financial behaviors? The influence of financial literacy, financial socialization, and self-control. *Journal of Enterprise and Development, 7*(1), 138–149. https://doi.org/10.20414/jed.v7i1.12892

Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. (2022). Financial education affects financial knowledge and downstream behaviors. *Journal of Financial Economics, 145*(2), 255–272. https://doi.org/10.1016/j.jfineco.2021.09.022

Kuncara, T., Yuningsih, N., Prasetyo, B. S., Nugroho, E. A., & Muchlis, A. (2026). Edukasi literasi keuangan digital bagi siswa sekolah dasar melalui pengenalan uang elektronik dan keamanan bertransaksi. *Jurnal Abdi Masyarakat Multidisiplin, 5*(2), 53–68. https://doi.org/10.56127/jammu.v5i2.2957

Kumar, A., Salo, J., & Bezawada, R. (2024). The effects of buy now, pay later (BNPL) on customers' online purchase behavior. *Journal of Retailing, 100*(4), 602–617. https://doi.org/10.1016/j.jretai.2024.09.004

Liu, Z., Xiao, J. J., & Yao, R. (2026). Digital payment adoption and financial vulnerability: Global evidence from multilevel models. *International Journal of Consumer Studies, 50*(6), e70269. https://doi.org/10.1111/ijcs.70269

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, n71. https://doi.org/10.1136/bmj.n71

Pandey, A., Tripathi, V., & Pandey, V. (2026). Behavioral nudges in finance: A review and future research agenda. *Journal of Economic Surveys*. Advance online publication. https://doi.org/10.1111/joes.70132

Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies, 45*(4), O1–O16. https://doi.org/10.1111/ijcs.12695

Sabri, M. F., Anthony, M., Law, S. H., Rahim, H. A., Burhan, N. A. S., & Ithnin, M. (2024). Impact of financial behaviour on financial well-being: Evidence among young adults in Malaysia. *Journal of Financial Services Marketing, 29*(3), 788–807. https://doi.org/10.1057/s41264-023-00234-8

Schomburgk, L., & Hoffmann, A. O. I. (2023). How mindfulness reduces BNPL usage and how that relates to overall well-being. *European Journal of Marketing, 57*(2), 325–359. https://doi.org/10.1108/EJM-11-2021-0923

Schomburgk, L., Belli, A., & Hoffmann, A. O. I. (2024). Less cash, more splash? A meta-analysis on the cashless effect. *Journal of Retailing, 100*(3), 382–403. https://doi.org/10.1016/j.jretai.2024.05.003

Seldal, M. M. N., & Nyhus, E. K. (2022). Financial vulnerability, financial literacy, and the use of digital payment technologies. *Journal of Consumer Policy, 45*(2), 281–306. https://doi.org/10.1007/s10603-022-09512-9

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Sukma, A. M., Sriyani, D., Siregar, K. A., & Zulham. (2026). Implementasi QRIS sebagai upaya mendorong digitalisasi pembayaran pada pelaku UMKM di Desa Timbang Lawan. *KREATIF: Jurnal Pengabdian Masyarakat Nusantara, 6*(3), 488–506. https://doi.org/10.55606/kreatif.v6i3.13253

Suprapto, Y., Valentina, S., & Haryanto, H. (2025). Gen-Z financial keys: The impact of self-control and financial literacy mediated financial behavior. *Manajemen dan Bisnis, 24*(2), 453–466. https://doi.org/10.24123/mabis.v24i2.974

Sutejo, B. S., Wijaya, L. I., Noordin, N. M., & Oktavianus, J. (2026). Gender differences in financial well-being: A multi-group analysis of Indonesian income-earning Gen-Z. *Jurnal Economia, 22*(1), 128–146. https://doi.org/10.21831/economia.v22i1.83694

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science, 4*(3), 199–214. https://doi.org/10.1287/mksc.4.3.199

Xu, F., & Zhang, L. (2025). The impact of digital payments on the financial vulnerability of rural households: Empirical evidence from China. *Frontiers in Sustainable Food Systems, 9*, 1553237. https://doi.org/10.3389/fsufs.2025.1553237