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Leadership in Fintech Builds Trust and Reduces Vulnerability More When Combined with Leadership in Sustainability

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Abstract: Financial technology (Fintech) and sustainability are two of the main drivers in the transformation of many organizations. New innovative technologies create new services for consumers. The focus on sustainability is a necessary reaction to the many challenges faced by organizations and, more broadly, society. The motivation to support these is, therefore, clear, but not all organizations move forward on both with the same enthusiasm. Leaders in Fintech do not always prioritize operating in a sustainable way. It is, therefore, important to explore and identify the synergies between Fintech and sustainability. One important aspect of this transformation is the consumers' perspective, particularly the trust they have, their personal information privacy concerns, and the vulnerability they feel. It is important to clarify whether leadership in Fintech, with sustainability leadership, is more beneficial than leadership in Fintech on its own. This research evaluates consumers' trust, privacy concerns, and vulnerability in the two scenarios separately and then compares them. Survey data is analyzed using Partial-Least Squares Structural Equation Modeling (PLS-SEM) and Multi-group Analysis (MGA). The findings show that leadership in both Fintech and sustainability builds trust more, which in turn reduces vulnerability more. Privacy concerns are lower when sustainability leadership and Fintech leadership come together; however, their combined impact was not found to be sufficiently statistically significant in this study.

Keywords: Fintech; sustainability; trust; personal information privacy concern; privacy; vulnerability; finance; green finance; digital transformation; Insurtech

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1. Introduction

Financial technology (Fintech) and sustainability are two important trends in organisations and society in general. Fintech can be an important part of the green economy moving forward. New information systems can offer financial services to people who did not have access to such services before [1]. Despite the many opportunities offered by Fintech and the reduction of some risks, other, newer risks have emerged. The customer may be attracted by some of the opportunities, but they may also be hesitant due to the challenges. They may not sufficiently trust Fintech and may also have concerns about personal information privacy.

Firstly, this research seeks to validate whether leadership in Fintech influences trust in Fintech, concerns about the privacy of personal information when using Fintech, and the feeling of vulnerability when using Fintech. It then compares trust, privacy concerns and vulnerability in two scenarios, one with leadership in both Fintech and sustainability and one with leadership just in Fintech without sustainability. The findings show that, as expected, leadership in Fintech with sustainability builds trust and reduces vulnerability more effectively. Contrary to what was expected, privacy concerns are not reduced more effectively when both are together.

The role of trust is important in consumers adopting new Fintech services as this adoption often changes the processes they are familiar with. Furthermore, people are not going through one change or adopting one new innovation or process; they are going through several at the same time, taking them out of their comfort zone. While most

studies attempt to focus on one area, such as focusing on Fintech on its own, there may be interrelationships between Fintech and sustainability that influence customer trust and privacy concerns [2]. For example, the negative environmental impact of Bitcoin mining or AI electricity needs are discussed extensively and seem to resonate with many people [3]. The many stories about the positive impact of Fintech on sustainability also resonate, such as offering banking services to people who live far away from a bank branch or offering financial services at a lower cost that makes them more accessible [1].

The customer is bombarded in the media with both positive and negative stories about Fintech's sustainability. The attention this gets is a clear indication of its importance, but given that there seems to be a negative story to counter every positive story, the actual influence seems unclear. Research in this area seems to reflect the media quite accurately with both positive and negative stories.

Fintech refers to specialised financial technologies or financial services that are heavily reliant on technology. Sustainability is a term used narrowly by some to refer to a specific area, such as the environment, and broadly by others, such as to satisfy the needs of the present without compromising the ability of future generations to satisfy their own needs [4]. There are also widely agreed targets, such as the seventeen Sustainable Development Goals (SDG) [5]. The definition of sustainability used here is focused on the context of finance and, more specifically, financial technology. Sustainable Fintech increases accessibility to financial services, provides lower financial risk than the alternatives, and burdens the environment less than the alternatives.

Fintech is not only influenced by the new technology made available but also by culture and other popular trends like sustainability [6]. At the same time, Fintech creates opportunities for those who are not well served by traditional finance. Those that are not served well by traditional finance often have limited, if any, financial services. It is not just people on low incomes who may not have access to the financial services they need but even SMEs [6]. There is, therefore, a positive feedback loop between sustainability and Fintech, encouraging green finance and economic sustainability.

On the other hand, in addition to the negative aspects of the financial services provided, there are also negative aspects of technology. As technology takes centre stage and has a more far-reaching role, Cyber-attacks can also be more harmful. While traditional finance has shown its own vulnerabilities over the years, there are more mature regulations and more experienced institutions that try to protect people using traditional finance that does not exist, at least to that level of sophistication, with some Fintech such as crypto assets.

From the consumer's perspective, they need to sufficiently trust these services to adopt them and use them fully without reservations. Given the information the user must share to use them, they may also have information privacy concerns. Lastly, even if they are using these new financial services, all might not be well, as they may feel a sense of vulnerability. Given this complex relationship between leadership in Fintech and sustainability, it is important to test if they reinforce trust, reduce privacy concerns, and reduce the sense of vulnerability from the user's perspective. Therefore, the research question is:

> Does leadership in Fintech strengthen trust, reduce personal information privacy concerns, and reduce the sense of vulnerability associated with Fintech when such leadership is combined with leadership in sustainability?

This research first validates a model that shows how leadership in Fintech builds trust, reduces privacy concerns, and reduces the feeling of vulnerability. It then compares the same model in two different scenarios, one with leadership in sustainability and one without. The findings show that leadership in Fintech combined with leadership in sustainability is more effective in building trust and reducing vulnerability. However, privacy concerns have not been significantly reduced by leadership in sustainability.

The theoretical foundation that follows brings together the literature on leadership, Fintech, sustainability and trust, privacy concerns, and vulnerability. Based on the literature from these areas, a research model is proposed. This is followed by the methodology

section, the analysis, the discussion of the practical and theoretical implications, and finally, the conclusion.

2. Theoretic Foundation

There is extensive literature on various aspects of Fintech and sustainability, but how the consumer perceives the combination of the two is not sufficiently covered. The literature review covers three related areas that create the theoretical foundation for the research model put forward in the next section. The links between these areas are identified and discussed. The first area is leadership in Fintech, and the second is leadership in sustainability. The third area of literature covered is the consumer's perspective when using Fintech, focusing on trust, personal information privacy concerns, and the sense of vulnerability.

2.1. Leadership in Fintech

For an organisation to be a leader in Fintech, it must be utilising new technologies to offer services that were not available in traditional finance. There are startups that are designed from their inception with a business model that utilises new technologies, but there are also incumbents that have a long history, in some cases, that are innovating in this area [7,8]. An important distinction here is between organisations trialing new technologies and those actually offering them to consumers. This is an important distinction as it is a popular marketing practice to announce that a new technology is being used when, in reality, it may be a trial that does not lead to full deployment.

The technologies themselves do not create a Fintech service, and there are often innovative ways of using relatively older technology. The disruption can involve unbundling services that were previously bundled together, but also the opposite sometimes [9]. For example, 'stablecoins' use technology that has been around for many years in a new, innovative way to offer some of the services a bank can offer. However, typically, it is the technology that creates opportunities for new services to be created. Firstly, several forms of AI are being combined with big data. The most obvious, because it is customer-facing and experienced directly, is the large language models used by chatbots [10]. Blockchain technology is being used in a variety of ways beyond the implementation of Bitcoin, which has made it well known. The use of blockchain is not limited to finance, but it is having a far-reaching impact, enabling a variety of financial services such as Decentralized Finance (DeFi).

While Fintech services are relatively new, they have also been around long enough to be required to deliver actual value, not only to customers but also to the organisations applying them. This does indeed happen for successful Fintechs, so at this point in their diffusion, it is hard to make the case for leadership in Fintech without delivering significant value to the innovators implementing it [11].

There is also a negative side to Fintech. AI, blockchain and other technologies may reduce some risks compared to traditional finance, but they also create new risks for consumers. As new financial services, including Fintech, seem to easily tap into some people's vulnerabilities with psychological mechanisms such as Fear of Missing Out (FOMO), sustainable practices are an important counterweight.

2.2. Leadership in Sustainability

The broad definitions of sustainability cover many things across three dimensions, sometimes referred to as the triple bottom line of social, ecological and economic value [12,13]. In addition to these benchmarks, green certificates can be used to prove green credentials.

While many business models are adapting to meet these many diverse sustainability goals, the different stakeholders can see them differently [14]. This suggests the consumer of Fintech services might also see sustainable goals differently from the organisation with which they are interacting.

While narrower definitions of sustainability may just focus on ecology, the triple bottom line and similar definitions include economic value [13]. Sustainability in relation to financial technology should also cover the financial dimension of people's lives. Sustainability in finance can include immediate and longer-term financial safety and prosperity. As there are often new financial services that go through a boom-and-bust cycle, harming the people who trusted them, this is particularly relevant to Fintech. Some meme-coins are an example of new and highly risky financial services supported by blockchain [15].

Despite the very limited research evaluating Fintechs (according to benchmarks like the social, ecological and economic value), it has been found that the larger, more successful and less indebted Fintech organisations score better on the sustainability benchmarks [2]. Research has also discovered that improved IT governance encourages sustainability in Fintech [16]. The limited research on Fintech and sustainability has also found evidence of 'green-washing' [17].

2.3. Trust, Personal Information Privacy Concerns and Vulnerability

Several technologies are changing how financial services are delivered to consumers. While people have become used to faceless financial services, these services and the criteria used to make decisions by them were made by humans, while now the criteria are often created by AI. People were used to trusting centralised historical institutions, but now they are expected to trust technologies such as blockchain instead. These changes challenge trust and can increase privacy concerns and the sense of vulnerability when using Fintech.

Whether a consumer is using traditional finance, such as making a purchase online using their Visa or Mastercard, or newer Fintech services, such as using cryptocurrencies as collateral for a loan, a service offered by Decentralized Finance (DeFi), trust is necessary [18]. While trust is needed with both traditional finance and Fintech, it is a different trust in different aspects of the service. While understanding trust in a new technology or service poses a challenge, there is a long history of research tweaking proven models to take into account a new development [19,20].

Personal Information Privacy Concern (PIPC) is caused by the risk involved in giving your personal information to someone else. The risk increases as the sensitivity of the personal information increases [21,22]. When using financial services, the risks are very high as someone can potentially lose their money, or loans can be taken out in their name, causing them problems in the future [23].

When someone trusts, they accept a vulnerability to the actions of someone else, who they expect will not take negative actions [24]. Therefore, vulnerability typically comes when there is a need to trust. Vulnerability can be felt by a consumer who has made the decision to use Fintech and, therefore, goes beyond the time frame of research that just looks at the technology adoption phase. After the decision to trust and adopt a Fintech, the user can feel vulnerable, and this feeling of vulnerability can affect the way they use technology. A person may show trusting behaviour by adopting Fintech but may not have the cognitive state of trust.

In addition to being vulnerable to someone else's actions, the increase in the use of technology may also make us feel vulnerable in the sense of being highly or completely dependent on technology to achieve our goals [25].

The key themes identified from all three sections of the literature discussed here are summarized in Table 1. These themes are the basis for the variables in the model.

Table 1. The literature on leadership in Fintech, sustainability, trust, privacy and vulnerability.

Variable	Key Themes	Source of Measured Variables That Are Adapted
Leadership in Fintech	Utilises some of the leading technologies such as advanced Generative AI, blockchain and IoT. Provides services that are easier to use and more effective than traditional finance. Has a business model that is fully or partially optimised for AI.	Gimpel et al., 2018 [7]; Zarifis and Cheng, 2024 [8]
Leadership in sustainability	General leadership in sustainability: Leadership across general sustainability goals such as social, ecological and economic value. Leadership in sustainability directly related to their customers: Financial sustainability is particularly important here.	Neri et al., 2021 [13]; Merello et al., 2023 [2]; Norris, 2024 [14]
Trust in Fintech	At least show trusting behaviour if not cognitively trusting. Trusting behaviour towards the technology used in Fintech. Trusting behaviour towards the financial services used in Fintech.	McKnight et al., 2017 [19]; McKnight and Chervany, 2002 [20]; Zarifis and Cheng, 2022 [18]
Personal information privacy concern when using Fintech	Personal financial information, such as account numbers, is at risk. Personal information that is not related to finance such as address at risk.	Gu et al., 2017, 2022 [21,22]; Sampat et al., 2023 [23]
Vulnerability when using Fintech	Vulnerable to the technology used in Fintech. Vulnerable to the financial services used in Fintech.	Baier, 1986 [24]; Misztal, 2011 [25]

3. Research Model

Firstly, we need to verify the relationship between leadership in Fintech, trust in Fintech, privacy concerns from using Fintech, and the vulnerability a person using Fintech feels. Therefore, before we evaluate the role of sustainability, we have a model with four variables and four relationships. The first four hypotheses cover these relationships. Once those relationships are proven, we can check if sustainability influences them. There would be no benefit in attempting to compare the two groups before validating the model. The initial research model is illustrated in Figure 1.

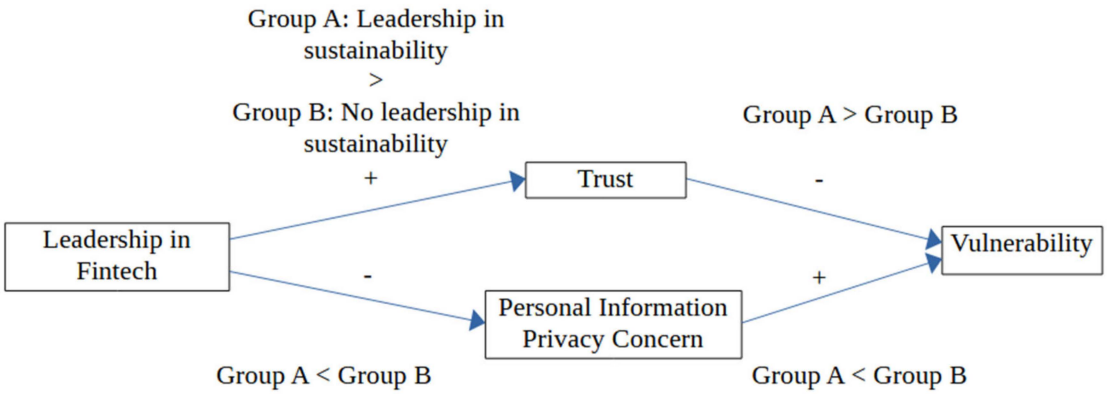

Figure 1. Initial research model.

A consumer must trust a technology to use it [20]. Leadership in Fintech across both the financial services and the technologies used builds trust in the consumers using them, as they will either understand the benefits theoretically or have a first-hand experience of them. Personal information privacy concerns emerge when sharing sensitive information [22].

Personal privacy concerns should also be reduced by leadership in Fintech. Therefore, the first two hypotheses are:

H1. *Leadership in Fintech positively influences trust in Fintech.*

H2. *Leadership in Fintech reduces personal information privacy concerns when using Fintech.*

As trust is needed to use Fintech, there is a sense of vulnerability to the actions of the financial organisation, which they expect will not take negative actions that will harm them in some way [24]. The trust a consumer has in the Fintech they are using, and the privacy concerns that emerge from using the Fintech influence how vulnerable the consumer feels. Therefore, the third and fourth hypotheses are:

H3. *Trust in Fintech reduces the feeling of vulnerability when using Fintech.*

H4. *Personal information privacy concern when using Fintech increases the feeling of vulnerability when using Fintech.*

Sustainability can be conducive to effective Fintech [2,16]. If the first four hypotheses are supported and the model is valid, we can then compare the same model in two groups, one with leadership in sustainability and one without. The four relationships in the model that form the four first hypotheses are compared between the two groups to prove that when leadership in sustainability is added to leadership in Fintech, trust is improved, and privacy concerns and vulnerability are reduced. Therefore, the last four hypotheses are:

H5. *Leadership in Fintech positively influences trust in Fintech more when there is also leadership in sustainability.*

H6. *Leadership in Fintech reduces personal information privacy concerns when using Fintech more when there is also leadership in sustainability.*

H7. *Trust in Fintech reduces the feeling of vulnerability when using Fintech more when there is also leadership in sustainability.*

H8. *Personal information privacy concern when using Fintech increases the feeling of vulnerability when using Fintech less, when there is also leadership in sustainability.*

4. Method

4.1. Data Analysis

Given the strong theoretical foundation of the research model, a quantitative method is used to evaluate it. This research compares how leadership in Fintech influences trust, privacy and vulnerability, with and without leadership in sustainability being present. Therefore, two groups are compared: The first, where leadership in sustainability is present, and the second, where it is not. This method achieves two things: Firstly, it validates the model linking leadership in Fintech, trust, privacy and vulnerability, and second, it either proves or disproves the role of sustainability.

The method used to analyse the data is the Structural Equation Modelling Partial Least Squares—Multi-group Analysis (PLS-MGA) using the SmartPLS 4.1 software [26]. More specifically, the more commonly applied bootstrap MGA is used, not the less popular permutation MGA [27]. This method is often applied to analyse consumer behaviour because it can utilise several measured variables to capture a latent variable that is hard to measure directly [26].

4.2. Data Collection

As this research attempts to understand the consumer's perspective on these important issues, a survey was used to collect their beliefs. Purposive sampling, also known as judgment sampling, was used as participants with specific experiences and knowledge were needed. The survey starts with a question asking the participants if they have used Fintech services. Participants are only allowed to continue the survey if they have experience using these financial services. Beyond the requirement to have experience in using these services, there was no other limitation on the target sample. The next questions in the survey covered the demographic information summarised in Table 2. The rest of the survey uses a Likert scale from one to seven for each of the questions. The survey items are based on the literature, as illustrated in Table 3. For each of the four latent variables, two measured variables are captured directly by asking questions. The survey was administered online. Two separate groups were given two different scenarios to read before completing the survey. The first scenario described a leader in both Fintech and sustainability, while the second scenario described a leader just in Fintech. The survey questions were the same for both groups.

The completed surveys for the first group are 523 and for the second group they are 491. After the usual checks, the valid completed surveys were found to be 489 and 468 respectively. The checks included whether all the questions were answered whether the time it took to complete the survey was unreasonably quick, and if the same number on the Likert scale was selected for all the questions.

When collecting data on beliefs about technology use, it is particularly important to have a good spread across different age groups, as the beliefs can be different, particularly with young users. Table 2 shows that there is a good spread across all the typical demographic information collected.

Table 2. Demographic information of participants.

Measure	Variable	Group 1	Group 2
Gender	Female	221	225
	Male	268	243
Age	18–24	194	186
	25–39	170	172
	40–59	98	87
	60 or older	27	23
Highest education qualification	No high school education	8	12
	High school graduate	333	296
	University bachelor's degree	134	140
	University postgraduate degree	14	20
Monthly income in pounds (GBP)	No income	146	122
	Income below 1500	86	89
	1501–3000	103	113
	3001–5000	135	128
	Over 5000	19	16
British nationality and British resident		314	312
Without British nationality but a British resident		175	156

Table 3. The reflective model's latent and measured variables.

Latent Variable	Measured Variables (Group 1, Leadership in Sustainability, Group 2, No Leadership)
Leadership in Fintech (F)	Utilises some of the leading technologies, such as advanced Generative AI, blockchain and IoT, to provide services that are easier to use and more effective than traditional finance. (FS1, FS2) Has a business model that is optimised for AI. (FM1, FM2)
Trust in Fintech (T)	Trusting behaviour towards the technology used in Fintech. (TT1, TT2) Trusting behaviour towards the financial services used in Fintech. (TF1, TF2)
Personal information privacy concern when using Fintech (P)	Concern for personal financial information such as account number. (PF1, PF2) Concern for personal information that is not related to finance, such as home address. (PI1, PI2)
Vulnerability when using Fintech (V)	Vulnerable to the technology used in Fintech. (VT1, VT2) Vulnerable to the financial services used in Fintech. (VF1, VF2)

5. Analysis and Results

Before moving on to the sophisticated statistics of PLS-SEM, some insight is offered by the simpler descriptive statistics. Very few participants across both of the groups put the lowest value '1' for any of the four variables measuring privacy concern or vulnerability, 148 out of 957, and only 21 participants chose '1' for all four variables. This suggests that privacy and vulnerability are a concern, to some degree, for most people. Several tests were made to check for differences between genders, ages, education levels, and nationality, but no statistically significant differences were identified. This can be interpreted as an indication of the pervasive adoption of Fintech across various demographics and the similar beliefs it encourages.

5.1. Measurement Model

This stage uses several methods to evaluate if the measured variables do indeed capture the value of the latent variable they are expected to represent or if there are any problems that must be considered before moving on to the structural model. For convergent validity, two tests were made: the factor loadings and the Average Variance Extracted (AVE), as illustrated in Table 4. The lowest factor loading is 0.896, so they are all over the minimum of 0.7. The factor loadings indicate the strength of the relationship and how well the variables are correlated. The SmartPLS 4.1 software uses the Confirmatory Factor Analysis for this. The lowest Average Variance Extracted (AVE) is 0.812, so they all pass the minimum threshold of 0.5. The latent variables have sufficient consistency and reliability as the lowest composite reliability (CR) is 0.769, which is above the threshold of 0.7. Table 5 illustrates the fourth test, the Fornell-Larcker criterion, that evaluates if there is adequate discriminant validity between the latent variables. The results show that the measured variables are indeed closer to their latent variable than any other latent variable. Overall, the tests support the measurement model [26].

Table 4. Measurement model analysis for convergent validity, consistency and reliability.

Latent and Measured Variable		Loadings	CR	AVE
Leadership in Fintech (F)	FS1/FS2	0.905/0.933	0.778/0.862	0.819/0.877
	FM1/FM2	0.904/0.940		
Trust in Fintech (T)	TT1/TT2	0.930/0.896	0.866/0.769	0.877/0.812
	TF1/TF2	0.944/0.905		
Personal Information Privacy Concern (P)	PF1/PF2	0.931/0.918	0.839/0.809	0.860/0.839
	PI1/PI2	0.924/0.914		
Vulnerability (V)	VT1/VT2	0.923/0.949	0.842/0.887	0.861/0.898
	VF1/VF2	0.933/0.946		

Table 5. Measurement model analysis for discriminant validity.

Variable	F	T	P	V
F	0.905/0.937			
T	0.904/0.859	0.936/0.901		
P	−0.413/−0.376	−0.306/−0.264	0.928/0.916	
V	−0.433/−0.305	−0.378/−0.168	0.851/0.846	0.928/0.948

The measurement invariance of the Composite Models Method (MICOM) was used to evaluate the invariance. As shown in Table 6, there is no significant difference between the results of the variances. Thereby, measurement model invariance is confirmed [27].

Table 6. Test for measurement invariance.

Variable	Original Difference	Permutation Mean Difference	2.5%	97.5%	Permutation *p* Value
F	−0.042	0.000	−0.151	0.153	0.581
T	0.127	0.002	−0.143	0.140	0.078
P	0.131	0.001	−0.143	0.139	0.069
V	0.063	0.002	−0.136	0.134	0.329

5.2. Structural Model

The structural model between the latent variables themselves was evaluated using several methods. The endogenous latent variables are evaluated using the coefficient of determination R-square. For group 1, the R-square of V is 0.739, and for group 2, the R-square is 0.723 as illustrated in Figure 2. Values higher than 0.75 are considered strong, and values between 0.50 and 0.75 are considered moderate; they are both moderate to strong [28]. The multi-group analysis shows support for hypotheses five and seven but does not support hypotheses six and eight. For the hypotheses that are not supported, the average values do support the hypotheses, but the difference between the groups is not statistically significant based on the methods used here. The results of the multi-group analysis are summarized in Table 7.

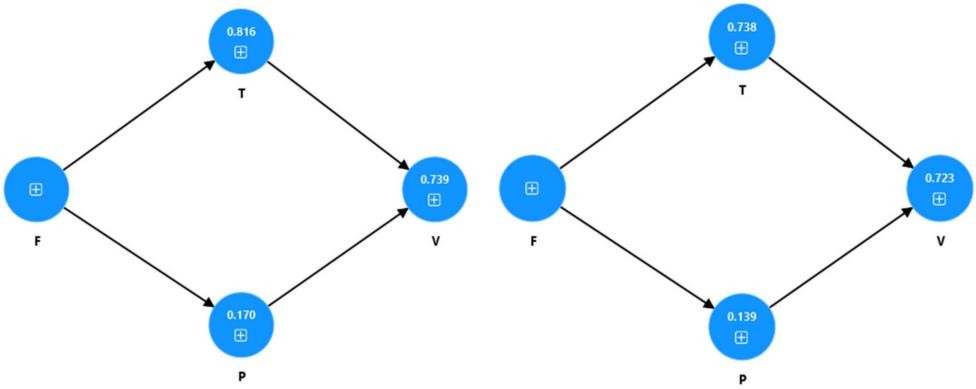

Figure 2. Structural models for groups 1 and 2.

Table 7. Results of the structural model and multi-group analysis.

Path	Difference (GA-GB)	2-Tailed (GA vs. GB) *p* Value	Hypothesis	Supported?
Fintech leadership to Trust	0.044	0.007	H5: GA>GB	Supported
Fintech leadership to Privacy	−0.036	0.639	H6: GA<GB	Not supported
Trust to Vulnerability	−0.189	0.000	H7: GA>GB	Supported
Privacy to Vulnerability	−0.051	0.128	H8: GA<GB	Not supported

6. Discussion

This research uses a quantitative approach to evaluate if leadership in Fintech with leadership in sustainability are more effective in building trust, reducing privacy concerns, and reducing vulnerability than leadership in Fintech without leadership in sustainability. This research first validates a model that shows how leadership in Fintech builds trust, reduces privacy concerns, and reduces the feeling of vulnerability when using Fintech. It then compares the same model in two different scenarios, one with leadership in sustainability and one without. The findings show that leadership in Fintech combined with leadership in sustainability is more effective in building trust and reducing vulnerability. Using leadership in Fintech and sustainability together reduces privacy concerns, but this difference is not statistically significant based on the methods used in the analysis [26]. The summary of the hypotheses and which ones are supported is presented in Table 8, and the updated model is presented in Figure 3.

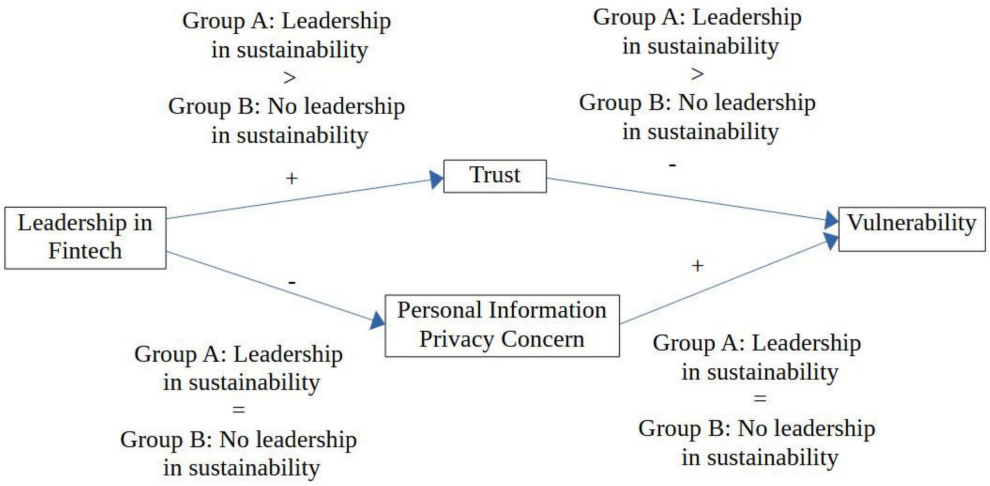

Figure 3. Model of leadership in Fintech, trust, privacy and vulnerability, with and without sustainability.

Table 8. Summary of hypotheses and results.

Hypothesis	Supported?
H1: Leadership in Fintech positively influences trust in Fintech.	Supported
H2: Leadership in Fintech reduces personal information privacy concern when using Fintech.	Partly supported
H3: Trust in Fintech reduces the feeling of vulnerability when using Fintech.	Partly supported
H4: Personal information privacy concern when using Fintech increases the feeling of vulnerability when using Fintech.	Supported
H5: Leadership in Fintech positively influences trust in Fintech more when there is also leadership in sustainability.	Supported
H6: Leadership in Fintech reduces personal information privacy concern when using Fintech more when there is also leadership in sustainability.	Not supported
H7: Trust in Fintech reduces the feeling of vulnerability when using Fintech more when there is also leadership in sustainability.	Supported
H8: Personal information privacy concern when using Fintech increases the feeling of vulnerability when using Fintech less when there is also leadership in sustainability.	Not supported

6.1. Theoretical Contribution

Existing research supports both some sustainable characteristics of Fintech, such as cryptocurrencies, but also some negative, harmful aspects, such as mining [3]. It is, therefore, useful to shed more light on the consumer's perspective of Fintech and sustainability.

The findings enhance the understanding of consumer behaviour and human-computer interaction (HCI) in this context, bringing together the literature on Fintech, sustainability, trust, personal information privacy concerns and vulnerability.

While most models focus on initial adoption, this is a model that recognises that while a consumer may use technology, they may not be using it wholeheartedly as they may not fully trust it, and they may still have concerns about how their personal data is used, and they may also feel vulnerable using it.

While the limited research looking at Fintech and sustainability find support for the link by taking a 'top-down' approach and evaluating Fintech companies against benchmarks such as social, ecological and economic value [2], or asking staff working in these organisations [16], this research takes a 'bottom-up' approach by looking at how Fintech services are received by consumers. The findings support the link between sustainability in the processes of a Fintech and being successful [2].

The model links the literature on trust, privacy concerns and vulnerability to Fintech and sustainability. It is a particularly important insight that the consumer feels vulnerable even if they sufficiently trust Fintech to use it [24]. This suggests trusting actions are taken even if the consumer is not completely comfortable with the risks taken. Additionally, the literature on leadership is utilised, and support is found for its importance and relevance [29]. Integrating the literature on these areas is particularly helpful, given the interrelated role of these issues in digital transformation.

6.2. Practical Contribution

The many arguments both for and against the sustainable credentials of Fintech suggest that it is more about how they are implemented, the processes and business models applied, and their inherent technological characteristics. This research supports leaders in making a more informed decision about how they will lead in Fintech and sustainably by understanding the perspective of one stakeholder group, their consumers. Supporting leaders in shaping Fintech business models in the most sustainable way that is beneficial to all stakeholders is particularly important at this point as we are going through a digital transformation that is disrupting old business models.

The first practical implication is that Fintech companies will build trust and reduce vulnerability more if they are also leaders in sustainability. The product lifecycle, when using AI, can be described as a positive feedback loop of using data to make the consumer happier, which in turn will lead to them purchasing more and providing more data. This product lifecycle with extensive AI involvement can be strengthened further with leadership in both Fintech and sustainability.

A second practical implication is that this research finds that even when there is sufficient trust to adopt and use Fintech, the consumer often still feels a sense of vulnerability. This means the leaders in Fintech must not just think about how to do enough for the consumer to adopt their service, but they should go beyond that and try to build trust and reduce privacy concerns to the degree that the consumer's belief that they are vulnerable is also reduced. Many Fintech organisations, like Klarna or Revolut, offer a broad range of services, so reducing the feeling of vulnerability may encourage their existing consumers to use additional services they are not using now.

6.3. Limitations and Future Research

The first limitation of this research is that data was collected from England. While Fintech and sustainability are issues that have global implications, each country has its own particular characteristics due to local regulations and culture. Furthermore, even if some

processes and services are the same, they may be perceived differently by the consumers in each country.

Future research can explore why privacy concerns are not influenced positively as much by sustainability as trust is. The link between sustainability and privacy concerns needs to be explored further since, although this research found some support for it, it was not conclusive.

7. Conclusions

Fintech and sustainability are important drivers in the transformation many organisations are going through. Many organisations want to convince consumers they are leaders in one or both of these. Leaders in Fintech do not always prioritise operating in a sustainable way. It is important to clarify whether leadership in Fintech, with sustainability leadership, is more beneficial than leadership in Fintech only. This research evaluated if leadership in Fintech with leadership in sustainability builds trust, reduces information privacy concerns and reduces vulnerability better than Fintech leadership on its own. Trust, privacy concerns and vulnerability are typical barriers to adopting Fintech wholeheartedly.

The findings show that leadership in Fintech combined with leadership in sustainability build trust, reduce privacy concerns and reduce vulnerability. However, leadership in Fintech, combined with leadership in sustainability, only increases trust and reduces vulnerability more effectively than leadership in Fintech on its own. Using leadership in Fintech and sustainability together also reduced privacy concerns, but this difference is not significant.

There is almost constant innovation of some Fintech models, with examples such as Revolut and Klarna. This illustrates that many Fintechs are searching for the most effective business model. These findings can inform Fintech's short-, medium- and longer-term focus, influencing the services and processes it offers consumers and, more broadly, its business model.

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