

Antecedents and Consequences of Using Social Media for Personal Finance

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This study was intended to find out whether social media could be a solution to improve personal financial literacy and ability. The authors examined the antecedents and consequences of using social media for personal finance with survey data from 359 individuals who used social media tools to view, learn, post, or ask for financial information or advice. They found that usefulness and compatibility were two reasons why people use social media for personal finance, while ease of use and concerns/risks were not. The study also revealed that social media use for personal finance were associated with positive financial outcomes and user satisfaction, which in turn prompted users' intentions to continue using social media for personal finance in the future. These findings suggested that social media could be a legitimate and fruitful source for individuals and financial industry to improve personal financial well-being.

Keywords: financial literacy, financial outcomes, personal finance, social media

Personal finance involves all financial decisions and activities of an individual or household, such as saving, investing, and lending. People will not be able to choose the right savings, loans, or investments for themselves, if they are not financially literate or well-informed (Lander, 2018). Personal finance is one of the most important aspects of people's lives. However, financial experts have observed that many millennials are struggling with financial capability and independence (LeBaron, Rosa-Holyoak, Bryce, Hill, & Marks, 2018). A study by the Standard and Poor's found that 67% of adults worldwide lack a basic understanding of financial concepts (Griffin, 2016). Solutions have been searched to help improve personal financial literacy and personal finance ability, with some research suggesting financial literacy and ability can be improved through policy and strategic campaigns from the public sector as well as private sectors' effort such as financial data aggregating websites, financial decision online tools, and personal finance online communities (Gale & Levine, 2010).

Social media is a new forum that allows people to collaborate, exchange ideas, and share information. Individuals of all ages are now actively sharing their thoughts, ideas, and opinions online. Social media has changed the way people communicate and has influenced politics, business, world culture, education, and so on. Personal finance cannot be exempted from this trend (Carlsson, Larsson, Svensson, & Åström, 2017). With the evolution of technology, learning has become a mobile activity, which can be just a click and swipe away. Because the younger generation prefers the use of social media for information gathering, social media has become the preferred choice regarding personal finances (Cao & Liu, 2017). Many financial institutions have begun to focus on providing educational programs that incorporate a wide range of social media platforms to reach consumers who are interested in learning more about their personal finances. In addition, a 2015 study revealed that 57% of millennials prefer to use financial mobile apps to manage their finances (Griffin, 2016). Another survey of 4,000 investors with

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more than \$100,000 in investable assets found that 34% of affluent investors surveyed used social media such as Facebook, LinkedIn, Twitter, and company blogs for personal finance and investing purposes (Skinner, 2013).

The impact of the social media on personal finance has attracted researchers' attention. A study by the MIT media lab at the Massachusetts Institute of Technology found that sourcing investment ideas from social-networking sites boosted returns. Specifically, the researcher gave \$20 trading coupons to 500 active financial traders and found returns were increased by more than 10% among those who traded with guidance from social networks compared to those who did not. In addition, returns were 4% higher among those who used social networks for guidance compared to those who only followed the highest-performance gurus (Bokov, 2016). However, the openness and lack of regulations inherent in social media outlets can be used by some users to spread false information and mislead people. It is unclear whether social media would be the solution to improve personal finance. To answer this question, this study tried to identify the antecedents and consequences of using social media for personal finance. We found that the perceived usefulness of using social media for personal finance and its compatibility—whether people's skills and abilities are compatible with social media—are the two important factors that attract people toward using social media for personal finance. Importantly, this study found that the use of social media did improve personal finance, by resulting in better outcomes around approaching, literacy, advice, access to personal finance. In addition, higher satisfaction with using social media for personal financial issues was found among the users.

Literature Review and Hypothesis Development

Social media, such as Facebook, LinkedIn, Twitter, YouTube, apps, and blogs, is fundamental to individuals for social interaction, information seeking, information sharing, entertainment, relaxation, communication, and expression of opinion (Whiting & Williams, 2013). Recently, social media has become a popular tool for individuals to manage personal finances. As of 2013, one-third of investors are using social media platforms for personal finance and investing (PF&I) purposes, and nearly 70% have reallocated investments based on content found through social media (Cogent Research, 2013). However, the literature regarding the use of social media for personal finance is

limited (Way, Wong, & Gibbons, 2011). A few studies investigated the online interactions about personal finance on blogs and Internet discussion forums (Hazari & Richards, 2011; Way et al., 2011) and found that individuals address topics that personal finance professionals considered central to building financial capacity in online interactions through social media. Willingham (2013) examined and found the effect of using social media in a financial literacy campaign. Studies also suggested that using social media for personal finance could influence future stock returns (Chen, De, Hu, & Hwang, 2014), individuals' investment decisions (Ammann & Schaub, 2017; Mudholkar & Uttarwar, 2015), and traders' disposition (Heimer, 2016). Nevertheless, empirical research about the antecedents and consequences of how people are using social media for personal finances is still lacking.

The Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) theory are often used to explain the adoption and usage of information technologies (IT; Taylor & Todd, 1995a). The two theories provide a theoretical basis for the use of social media for personal finance and investing. As a powerful way to represent the antecedents of technology usage, the TAM proposes that the perceived ease of use and the perceived usefulness of a technology leads to its acceptance by users (Davis, 1989; Lee, Kozar, & Larsen, 2003; Legris Ingham, & Collette, 2003; Taylor & Todd, 1995a). The DOI theory suggests that five perceived characteristics of an innovation influence adoption: relative advantage, compatibility, complexity, observability, and trialability (Moore & Benbasat, 1991; Rogers, 1983; Taylor & Todd, 1995a).

We focused on the perceived characteristics of innovations that consistently influence adoptions and integrated pieces of the TAM and DOI theory in the present study. Three of five perceived characteristics of innovations that affect adoption—relative advantage, complexity, and compatibility—have been found to be consistently related to innovation adoption (Taylor & Todd, 1995a). Therefore, we examined these three common characteristics of innovation without exploring observability, and trialability.

To avoid redundant constructs, we integrated the TAM and the DOI theory and used perceived usefulness and ease of use in the TAM, instead of using complexity and relative advantage in the DOI. The perceived relative advantage and

perceived complexity in the DOI theory are similar to the perceived usefulness and perceived ease of use in the TAM, respectively (Moore & Benbasat, 1991). Specifically, the perceived complexity is opposite in the meaning to the perceived ease of use. When an innovation is easy to use, the complexity of the innovation is low. In addition, the construct of perceived relative advantage is similar to perceived usefulness. Thus, this study adopted core constructs of the two theories and established a theoretical model that guided this research, as shown in Figure 1.

Antecedent Factors of the U.S. Media for Personal Finance

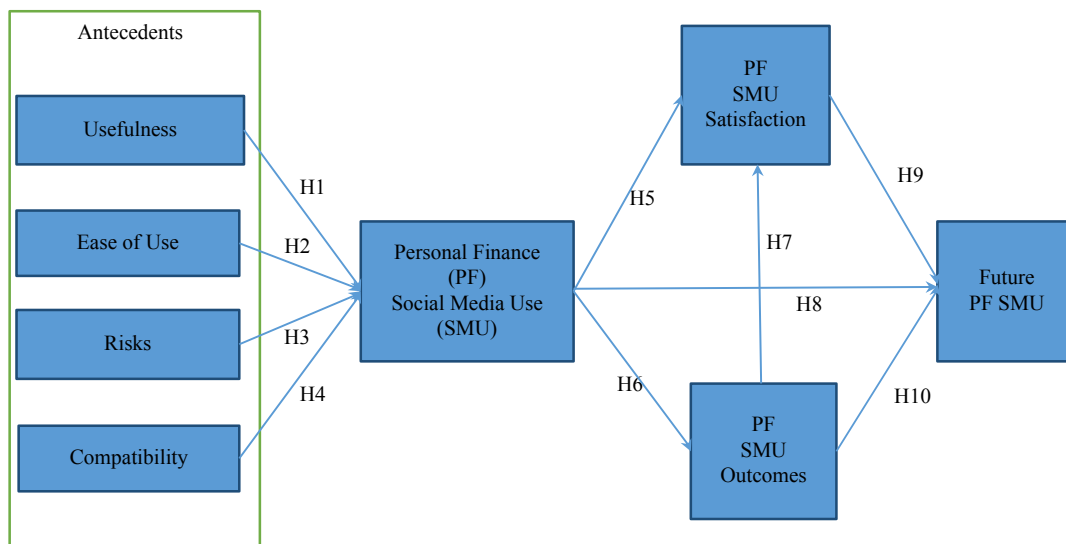
Perceived usefulness is defined as “the degree to which a person believes a particular system would enhance his or her job performance” (Davis, 1989, p. 320). Individuals use social media for personal finance and investing because they believe social media can help them in many ways (Openshaw, 2014). Through social networks, investors can easily find a financial professional’s biographical and professional information, as well as reviews and comments on the professional’s service. They can contact the professional through Facebook, LinkedIn, and other social media. Social media can also help investors learn necessary skills for managing finances and making financial and investment decisions. For example, Seeking Alpha is one of the largest finance-related social media websites in the United States, and it provides market news, stock ideas, portfolio management,

marketing forecasts, investing strategies, earnings reports, transcripts, and filings, so that individual users and viewers can make their personal and professional financial decisions after leveraging the breadth and depth of the contents on Seeking Alpha (Chen et al., 2014; Seeking Alpha, 2018). Thus, H1 is proposed.

H1: Perceived usefulness of social media is positively related to the use of social media for personal finance.

Perceived ease of use is another important factor in the TAM that influences the usage of technologies. Perceived ease of use refers to “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989, p. 320). Lane and Coleman (2012) studied perceived ease of use and usefulness of social media for university students in the United States and found that perceived ease of use of social media was positively related to the intensity of use. With the development of social media technologies, learning and managing personal finance can be just a click, swipe, or tap away (Griffin, 2016). Users can easily look up financial information using social media sites and can receive financial education directly from experts through social platforms. Live streaming apps on mobile devices allow users to interact with others and discuss about finances, and help them manage their finances in real-time, no matter where they are. Thus, H2 is proposed.

Figure 1. Research model for social media use for personal finance.



H2: Ease of use of social media is positively related to the use of social media for personal finance.

The extent of social media use (SMU) for personal finance depends not only on its perceived usefulness and ease of use, but also on the negative factors such as users' privacy and security concerns about social media. It is easy to join and extend social networks, but many social media sites lack basic security measures (Gross & Acquisti, 2005). Third parties can easily access participants' data without the social network site's collaboration. For example, in the recent Facebook–Cambridge Analytica data misuse scandal, Cambridge Analytica gained access to private information of more than 87 million Facebook users (BBC, 2018). The private information included users' identities, friends, groups, and “likes.” In addition, social media users are facing serious security threats, one of which are phishing attacks that have caused direct and indirect financial loss of users (Chen, Bose, Leung, & Guo, 2011). These perceived risks and challenges keep individuals from moving toward greater adoption of social media in personal finance. Thus, H3 is proposed.

H3: Perceived risks factor of social media is negatively related to the use of social media for personal finance.

Based on the DOI theory, *compatibility* is “the degree to which the innovation is perceived as consistent with the existing values, past experiences, and needs of the potential adopter” (Rogers, 1983, p. 223). Compatibility has been considered as an important factor for social media adoption (Ainin, Parveen, Moghavvemi, Jaafar, & Mohd-Shuib, 2015; Odoom, Anning-Dorson, & Acheampong, 2017; Wamba & Carter, 2016; Zolkepli & Kamarulzaman, 2015). When social media is considered compatible with the way individuals use technologies and manage personal finance, individuals are more likely to consider the adoption of social media for personal finance and investing. For instance, individuals can use email accounts or phone numbers to access Facebook for participating in discussions about stock choices and interacting with other investors or financial professionals. Thus, H4 is proposed.

H4: Compatibility of social media is positively related to the use of social media for personal finance.

SMU for Personal Finance and the Consequences

The use of social media for personal finance brings about a variety of outcomes (Cao & Liu, 2017). Social media platforms increase users' engagement in personal finance. For instance, social media platforms allow users to interact with each other directly and provide immediate feedback on financial professionals, financial products, and the business performance of related companies (Openshaw, 2014). In addition, social media platforms provide more efficient financial education, and allow users to receive financial education directly from financial professionals in a fast and easily digestible way and without the limit of time and location (Griffin, 2016).

Because of the value of social media for its users in terms of providing financial guidance and advice on personal finance, users become satisfied with the utilization of social media in personal finance. SMU satisfaction is the overall affective evaluation that an active user of social media for personal finance has (Rauniar, Rawski, Johnson, & Yang, 2013). As a type of IT, social media has utilitarian and hedonic values for users. Specifically, the utilitarian value is related to goal-oriented usage of social media and the hedonic value is related to pleasure-oriented usage of social media (Van der Heijden, 2004; Rauniar et al., 2013). Both utilitarian and hedonic values are positively related to users' satisfaction with utilizing social media (Rauniar et al., 2013). In the context of using social media for personal finance, when users spend a considerable amount of time reading contents on personal finance and looking for financial advice through various social media sites, it is expected that they would learn financial knowledge and improve their decisions in financial planning. It is also possible that the more often users visit social media sites/apps on managing personal investment, the more value they would retrieve from using social media, and thus they would become more satisfied with using social media for personal finance. Thus, H5 is proposed.

H5: The use of social media for personal finance is positively related to users' satisfaction.

The use of social media for personal finance could bring out a variety of outcomes (Cao & Liu, 2017). First, social media platforms help users approach personal finance and increase their engagement in personal finance. For instance, social media platforms allow users to interact with each

other directly and provide immediate feedback on financial professionals, financial products, and the business performance of related companies (Openshaw, 2014). Secondly, social media provides users access to personal finance education and advice. Social media platforms provide users efficient financial education and allow users to receive financial education directly from financial professionals in a fast and easily digestible way and without the limit of time and location (Griffin, 2016). In addition, social media can improve users' ability in dealing with personal finance and affect their investment decisions. For example, Chen et al. (2014) analyzed articles published on one of the most popular social media platforms for investors in the United States and found that investor opinions distributed through the social media were related to future stock returns and earnings surprises. Some studies have also shown that social media can influence individuals' investment decisions (Mudholkar & Uttarwar, 2015) and there is herding behavior via social trading platforms regarding personal finance (Ammann & Schaub, 2017; Heimer, 2016). For instance, Ammann and Schaub (2017) suggested that the comments posted on a social trading platform by traders encourage followers to replicate investment decisions of traders. Therefore, H6 is proposed.

H6: The use of social media for personal finance is positively related to financial social media utilization outcomes.

It is expected that the positive outcomes of using social media for personal finance will reinforce users' satisfaction with using social media for personal finance. So far, there is a lack of research on the relationship between outcomes and satisfaction of using social media for personal finance. Nevertheless, it is intuitive that any positive outcomes around how to approach personal finance, the ability to deal with personal finance, increased knowledge around personal finance, as well as better and more access to personal finance advice would lead to better satisfaction with such use. In addition, it has been shown that the post purchase outcomes led to satisfaction or dissatisfaction many times (Panda, 2014). Research also shows that goal attainment (a measure of outcome) leads to satisfaction with health care service and its provider (Dellande, Gilly, & Graham, 2004). Therefore, H7 is proposed.

H7: The outcomes of using social media for personal finance are positively related to users' satisfaction.

Future Use of Social Media in Personal Finance

Once users have adopted social media for personal finance, their experience in using social media for personal finance and investing may enable them to continuously and increasingly use social media in the future. Experiences of using IT tools help users gain extensive knowledge and technology skills, which in turn help shape intention to use the IT tools in the future (Lee et al., 2003; Legris et al., 2003; Taylor & Todd, 1995b). In addition, users' experiences using IT tools stabilize the intention and behavior relationship (Taylor & Todd, 1995b). Consequently, users are going to use those IT tools in the future. Once users have used social media, their experiences of using social media have enabled them to accept and use it in the future (Parra-López, Bulchand-Gidumal, Gutiérrez-Taño, & Díaz-Armas, 2011). The experience acquired from using social media for personal finance can strengthen users' perception of usefulness and ease of use and reduce the perception of risks, thus favoring future use. With the accumulated experience in using social media for personal finance, users have established related knowledge bases and technology skills, and consequently can use social media effectively and efficiently in personal finance. Users have greater ability to manage their personal finances and become more confident in making investment decisions. Thus, social media helps users approach their personal finance goals and generate greater satisfaction with their use of social media for personal finance. As a result, users may continue to use social media for financial purposes and learn new skills to handle personal finance in the future. Thus H8, H9, and H10 are proposed.

H8: The use of social media in personal finance is positively related to users' such use in the future.

H9: Users' satisfaction with the use of social media for personal finance is positively related to their use of social media for personal finance in the future.

H10: The outcomes of using social media in personal finance is positively related to users' such use in the future.

Methodology

Constructs and Research Instrument

The study used questionnaire survey to collect data. The survey included questions regarding the antecedents and

consequences of SMU for personal finance as well as questions about current sSMU for personal finance, as shown in Figure 1. Questions on individual perceptions of SMU for personal finance were mostly adopted from studies on technology adoption and innovation, adding specifics for social media regarding personal finance. The consequences of SMU for personal finance included the outcomes of SMU and satisfaction with SMU for personal finance, as well as future use questions. These questions were mostly based on the literature review in the previous section of this research regarding SMU as well as general technology adoption and innovation. Table 1 shows all the constructs along with the items used for each construct.

Subjects and Procedures

To develop the survey questionnaire to address our research questions on the antecedents and outcomes of using social media for personal finance, the relevant literature on technology adoption, TAMs, and the DOI theory were reviewed. After the literature review, quantitative data were collected.

The survey was conducted online through SurveyMonkey during October 7 to November 6, 2013. The link to the survey was sent to a group of 50 business undergraduates, who in turn forwarded it to their classmates, friends, and relatives. A total of 410 people responded to the survey. Among the respondents, 359 people reported that they

TABLE 1. Survey Constructs, Items, and Summary of Factor Outer Loading: The Social Media Utilization for Personal Finance Model

Construct	Items	OL: Outer Loading	OL: Standard Error	OL: T Value
Personal finance SMU (Legris et al., 2003)	1. I spend a lot of time reading blogs on personal finance and/or investment	0.860	0.023	37.893
	2. I frequently visit social media apps on personal investments.	0.924	0.011	81.174
	3. I spend a considerable amount of time looking for financial advice through various social media sites	0.917	0.012	76.236
	4. I have learned financial knowledge using social media sites	0.891	0.014	63.511
	5. Social media has influenced my decisions in financial planning	0.877	0.017	51.17
Usefulness (Davis, 1989)	1. I think social media can help me access information about personal financial advices	0.892	0.014	63.469
	2. I think social media can help me find personal finance financial experts	0.849	0.026	33.186
	3. I think social media can help me learn the necessary skills to manage finances	0.927	0.008	113.664

(Continued)

TABLE 1. Survey Constructs, Items, and Summary of Factor Outer Loading: The Social Media Utilization for Personal Finance Model (Continued)

Construct	Items	OL: Outer Loading	OL: Standard Error	OL: T Value
	4. I think social media can help me accomplish my financial goals	0.850	0.024	34.862
Ease to use (Davis, 1989)	1. I think it is easy to look up financial information using social media sites	0.906	0.014	65.084
	2. I think it is easy to access personal finance information through social media sites	0.899	0.015	61.284
	3. I think it is easy to interact with others and discuss about my finances through social media sites	0.860	0.02	42.457
Risks	1. I have privacy concerns when using social media to discuss my finances	0.964	0.013	72.723
	2. I have security concerns when using social media to discuss my finances	0.977	0.008	128.292
Compatibility (Rogers, 1983; Taylor & Todd, 1995)	1. I think using social media fits well with the way I handle my finances	0.942	0.010	94.28
	2. I think using social media fits well into my financial planning style	0.951	0.010	91.896
	3. I think social media applications will be compatible with the way I handle my finances	0.944	0.009	105.137
PF SMU Outcomes (Way et al., 2011)	1. Social media help me approach personal finance	0.953	0.009	109.616
	2. Social media improve my ability in dealing with personal finance	0.956	0.007	140.036
	3. Social media increase my knowledge of personal finance	0.934	0.009	109.88

(Continued)



TABLE 1. Survey Constructs, Items, and Summary of Factor Outer Loading: The Social Media Utilization for Personal Finance Model (Continued)

Construct	Items	OL: Outer Loading	OL: Standard Error	OL: T Value
PF SMU Satisfaction	4. Social media provide me access to personal finance advice	0.943	0.010	96.916
	1. I am satisfied with the guidance provided by social media on personal finance	0.927	0.011	85.361
	2. I am satisfied with social media financial advices	0.910	0.014	65.722
Future PF SMU (Taylor & Todd, 1995)	1. I plan to use or continue to use social media for personal financial purposes in the future	0.951	0.009	106.295
	2. I plan to use or continue to use social media to learn new skills to handle personal finance	0.952	0.008	116.05

Note. PF = personal finance; SMU = social media use.

have used at least one of various online or/and social media tools to view, learn, post, or ask for financial information or advice. The social media tools include several categories: (a) social networking sites (e.g., Facebook, MySpace, LinkedIn, etc.), $n = 211$; (b) blogs, Wiki, Micro-blogs Twitter on finance, $n = 83$); (c) online videos and audios, such as podcasts (e.g., from iTunes, YouTube, Skype, etc., on finance), $n = 110$; (d) online financial newspapers, broker websites, bank customer services, $n = 126$; (e) online finance organizing/planning, expense tracking, and investment help sites (e.g., Pinterest, Geezeo, Wesable; BillMonk, Obopay; Covestor, Tradeking, etc., $n = 79$); online banking and/or smart-phone applications money/investment management, $n = 157$).

The demographic information of the respondents is as in Table 2.

Data Analysis

Measurement Model

To answer our research questions, we used SmartPLS (Ringle, Wende, & Willm, 2005) to validate and test the path and measurement models created. The question items

loaded on 12 factors which all directly mapped to the theorized constructs. Table 1 shows the items, with all of their loadings above 0.8.

Analysis of the Measurement Model

Table 3 presented descriptive statistics and correlations among the constructs. The cross loading of items was minimal. The analysis showed that the measure model had sound convergent validity, discriminant validity, and internal consistency. Average variance extracted (AVE) of the measures ranged from 0.880 to 0.952, which exceeded the recommended minimum of 0.5 (Gefen & Straub, 2005). The square roots of the AVEs were higher than the cross-construct correlations, which demonstrated acceptable convergent and discriminant validity. In addition, Cronbach's alpha for all constructs exceeded 0.9 (0.7 is often used as the threshold), and the composite reliability of all constructs exceeded 0.8 (0.7 is often used as the threshold), indicating a good internal consistency.

Structure Equation Modeling

SmartPLS was used to test the hypotheses and evaluate the structural model of this study. SmartPLS fits the needs of a predictive-causal analysis of this study (Chin & Newsted,

TABLE 2. Respondent Profile (Total N = 359)

Demographic Profile		N	%
Gender	Male	191	53.20
	Female	164	45.68
	Other	4	1.11
Age	25 and under	165	45.96
	26–30	70	19.50
	31–35	34	9.47
	36–45	42	11.70
	46–55	37	10.31
	56 and above	11	3.06
	Marriage status	Married	101
Single/Other		258	71.87
Highest academic Degree	High school	152	42.34
	Associate degree	46	12.81
	Bachelor's degree	101	28.13
	Master's degree	46	12.81
	First professional and doctoral degree	6	1.67
	Other	8	2.23
	Race	American Native	10
Asian		89	24.79
Black or African American		15	4.18
White		114	31.75
Hispanic or Latino		115	32.03
Other		16	4.46

TABLE 3. Correlations and Reliability/Validity Statistics

	1	2	3	4	5	6	7	8
1. PF SMU	–							
2. Usefulness	0.458	–						
3. Ease of use	0.402	0.686	–					
4. Risk	–0.181	–0.038	–0.096	–				
5. Compatability	0.623	0.595	0.65	–0.191	–			
6. SMU satisfaction	0.495	0.475	0.524	–0.198	0.559	–		
7. SMU outcomes	0.687	0.589	0.604	–0.178	0.738	0.616	–	
8. Future PF SMU	0.628	0.582	0.566	–0.147	0.714	0.579	0.852	–
Composite reliability	0.937	0.903	0.867	0.939	0.941	0.903	0.947	0.896
Cronbachs Alpha	0.952	0.932	0.918	0.970	0.962	0.954	0.962	0.950
AVE	0.799	0.775	0.790	0.942	0.894	0.911	0.863	0.906
SQRT (AVE)	0.894	0.880	0.889	0.971	0.946	0.954	0.929	0.952
R ²	0.410					0.389	0.472	0.734
Q ²	0.304					0.336	0.381	0.635

Note. AVE = average variance extracted; PF = personal finance; SMU = social media use; SQRT = square root.

1995; Wold, 1982) and it requires fewer data specification constraints as this study borrowed measurements from other studies. The analysis used PLS algorithm, blindfolding, and bootstrap functions, and a resampling method of 500 samples (Chin, 1998) for Smart PLS (Partial least squares).

The estimated regression coefficients of the path analysis for the structural model and their significance levels are presented in Figure 2. All of the path coefficients, except three, were statistically significant and in the expected direction. First, usefulness had a significant and positive relationship with SMU for personal finance (coefficient = 0.189, $p < .01$), indicating that H1 was supported. Ease of use (coefficient = -0.098, $p > .05$) and perceived risks (coefficient = -0.076, $p > .05$) did not have a significant relationship with SMU for personal finance, indicating that H2 and H3 were not supported. Compatibility had a significant and positive relationship with SMU (coefficient = 0.560, $p < .001$), indicating that H4 was strongly supported. Fifth, SMU for personal finance was positively related to consumer satisfaction with such use (coefficient = 0.136, $p < .05$) and actual financial outcomes (coefficient = 0.687, $p < .001$). Thus, H5 and H6 were supported. However, SMU for personal finance was not significantly related to customers' intentions of using social media for personal finance in the future (coefficient = 0.007, $p > .05$) Thus, H7 was not supported. Additionally, the outcome of SMU for personal finance was positively related to users' satisfaction with such use (coefficient = 0.523, $p < .001$), thus supporting H8. Lastly, both the outcomes (coefficient = 0.775, $p < .001$) and satisfaction (coefficient = 0.079, $p < .05$) with using social media for personal finance were positively related to consumer intention to use social media for personal finance in the future. H9 and H10 were thus supported. Therefore, we conclude that all hypotheses, except H2, H3, and H7, were corroborated by this study.

To further examine the robustness of the study, the data analysis also investigated the explained variability and predictive relevance of the structural model. The indices for the explained variability (R^2) and the Q^2 test for predictive relevance (redundancy) are shown in Table 3. The results showed that the structural model of the study achieved good R^2 values for its endogenous variables (0.304 for SMU, 0.336 for satisfaction, 0.381 for outcomes, and 0.734 for future use of social media for personal finance). Q^2 test for predictive relevance (redundancy) was used to

measure the quality of the structural model (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The results showed that the Q^2 values were all positive, which suggests that the research model had predictive relevance. The Q^2 values were 0.304 for social media, 0.336 for satisfaction, 0.381 for outcome, and 0.635 for future use of social media. They indicated that the observed values might be well reproduced by the model and its parameter estimates (Hair, Sarstedt, Matthews, & Ringle, 2016).

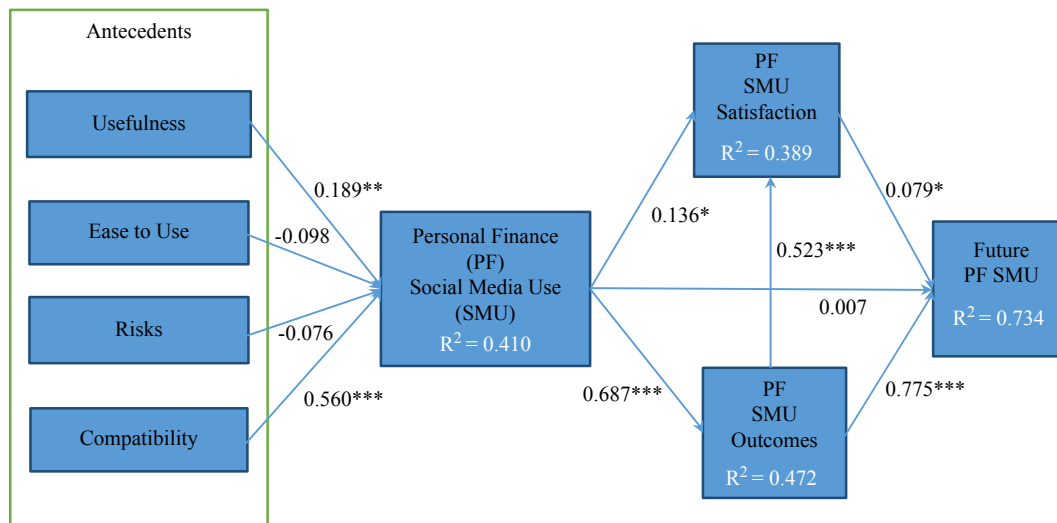
Discussions

The results of the structural equation model analysis showed that the research model was well grounded. The factors of individual perception of using social media for personal finance in the model accounted for 41.0% of the variance in the use of social media for personal finance. The model also accounted for 47.2% of the variance in the reported outcomes of using social media for personal finance, 38.9% of the variance in the reported individual satisfaction with using social media for personal finance, and 73.4% of the future use of social media for personal finance.

Antecedents and SMU for Personal Finance (H1-4)

As for antecedents of using social media for personal finance, the structural equation modeling analysis results showed that not all of the paths between technological adoption factors and SMU for personal finance were statistically significant. The perceived usefulness of using social media for personal finance was shown to have a positive relationship with using social media for personal finance (coefficient = 0.189, $p < .01$). This result is similar to what research reported about perceived usefulness of social media in general and about actual usefulness of social media for finance in particular (Chen et al., 2014; Seeking Alpha, 2018). Compatibility was the strongest factor associated with SMU for personal finance among the four user perception factors ($\beta = 0.560$, $p < .001$). Different from others' research about social media adoption (Lane & Coleman, 2012), perceived ease of use ($\beta = -0.098$, $p > .05$) did not seem to have a strong relationship with SMU for personal finance. Despite reports about security, privacy, and other problems (Chen et al., 2011, Gross & Acquisti, 2005), perceived risks of use of social media ($\beta = 0.076$, $p < .05$) also did not seem to have a significant relationship with SMU for personal finance. This confirmed findings about the lack of relationship between perceived risk and using social media in organizations (Cao, Hong, Ajjan, & Le, 2018) and in college teaching (Cao,

Figure 2. Structural equation analysis results.



* $p < .05$. ** $p < .01$. *** $p < .001$.

Ajjan, & Hong, 2013). Importantly, this finding might also be due to a sample issue. In our study, 45.96% of respondents were 25 years old or under; therefore, it is possible that the results about perceived risks were dominated by young people who often disregard or neglect risks.

SMU for Personal Finance and the Consequences (H5–7)

The structural equation analysis also confirmed and furthered the findings of Openshaw (2014) and others (Mudholkar & Uttarwar 2015) on the relationships of the use of social media for personal finance and the consequences of such use. First, this study showed that SMU for personal finance had a very significant and positive relationship with user reported outcomes ($\beta = 0.687, p < .001$), such as improved ability in dealing with personal finance, increased knowledge about personal finance, access to personal finance advice, and help in approaching personal finance. Second, using social media for personal finance was positively related to users' satisfaction of using social media for finance ($\beta = 0.136, p < .05$). In addition, the reported outcomes of using social media for personal finance had a strong relationship with users' satisfaction as well ($\beta = 0.523, p < .001$).

Consequences and the Future Use of Social Media for Personal Finance (H8–10)

For the future use of social media for personal finance, the analysis showed that it was strongly related to

individual reported outcomes of their current use of social media for personal finance ($\beta = 0.775, p < .001$). It was also related to user satisfaction with the use of social media for personal finance ($\beta = 0.079, p < .05$), though the relationship was much weaker than reported outcomes. These findings about the existence of the relationships were in accord with the findings of Taylor and Todd (1995b) and Parra-López et al. (2011) about general IT use that technology use could improve user satisfaction and result in good outcomes. However, different from general IT, the future use of social media for personal finance was not significantly related to their current use of social media for personal finance ($\beta = 0.007, p > .05$) directly. These findings seem to suggest that people are more rational when it comes to using social media for personal finance. Specifically, their choice of continuing using social media for personal finance or not is not influenced by whether they have used it before. Instead, such continuous choice is based on positive outcomes and individual satisfaction. Moreover, the fact that the reported outcomes had a stronger relationship with continued future use than their satisfaction with the use further demonstrates the rationality of individuals regarding using social media for personal finance.

Thus, the results of our study show that users' current usage of social media for personal finance was not directly related to the usage in the future, but through two mediation factors, SMU outcomes and SMU satisfaction in personal finance.

Our current model considers the mediation effects on the relationship between current social media usage and future usage in personal finance. It suggested that after current users achieved positive outcomes and improved satisfaction in using social media for personal finance, they would like to use it in the future for the same purposes.

Conclusions and Implications

In conclusion, the analysis of the study indicated several major findings. First, almost half of the variance of the current use of social media for personal finance could be explained by the technology adoption factors. The compatibility between using social media for personal finance and individual style of dealing with personal finance was the most dominating factor. Second, one of the most important findings of the analysis was: using social media for personal finance was related to positive personal-finance-related outcomes ($\beta = 0.687, p < .001$) and higher satisfaction ($\beta = 0.136, p < .05$) with using social media for personal financial status. In addition, positive outcomes were related to higher satisfaction of using social media for personal finance. Third, a majority of the variance (73.4%) in the future use of social media for personal finance could be explained by perceived financial outcomes of using social media for personal finance ($\beta = 0.775, p < .001$) and their personal satisfaction of such use ($\beta = 0.079, p < .05$). Furthermore, the current usage of social media for personal finance was related to the usage in the future indirectly through two mediation factors, SMU outcomes and SMU satisfaction in personal finance.

These findings have many practical implications, especially in a turbulent era in which new communication and collaborative technologies, such as social media, are increasingly disrupting existing ways to approach personal finance individually and to facilitate personal finance organizationally. This research suggests that social media applications are important to both individuals and organizations regarding personal finance. It demonstrates that both individuals and organizations must leverage these technologies effectively and maximize the benefits that social media can bring, to improve consumer financial satisfaction and enhance personal financial wealth. Social media could be helpful to all consumers, especially underserved groups, who would benefit most from better and more information search (Fan & Chatterjee, 2017) using social media. Social media could also be complementary to other financial advice sources,

as what financial software does to retirement savings (Bi, Finke, & Huston, 2017). Above all, this study reveals social media as a legitimate and fruitful source for individuals to improve their financial well-being. Thus, individuals should examine existing social media applications that can be used for personal finance and find out which ones are useful. They should also explore the applications and select the ones that are compatible to their existing skills the most.

This study also provides insights for the financial industry to address issues related to social media adoption and use for their customers. First, organizations and personal financial advisors should be aware of the positive outcomes of using social media for personal finance for their customers. For example, while financial advisors are still one of the most preferred information source, the advisors, they and similar financial organizations may need to explore how to use various social media applications to facilitate the connection of people of similar financial interests as well as finance literacy learning and personal financial decisions (Huang, Lassu, & Chan, 2018; Moreland, 2018). Second, they should realize that usefulness and compatibility are the two most important factors that encourage consumers to use social media for personal finance, and then design their financial advices and offerings accordingly. They should also try to improve consumers' compatibility. Third, they should understand that individuals' SMU for personal finance is not necessarily prohibited by various environmental and security risks. While it should not be too complicated, ease of use may not be considered as important for consumers' choice of using social media for personal finance.

As with other research efforts, this study is not without limitations that can offer avenues for future research opportunities. First, this study obtained data from respondents only once in 2013. Time has changed. A longitudinal study may be more fruitful in findings about SMU in personal finance over time. Second, this is not a random sampling from different geographical regions, sectors, or types of organizations but convenient sampling. Thus, the generalization of the findings of this study requires a caveat. Third, this study limits its focus on establishing the model and examining outcomes of SMU. Other perspectives of study that are not examined, such as investigating individual characteristics (e.g., race, gender, social economic status, etc.), may also be important. Finally, while a thorough process involving practitioners and scholars was employed to develop a valid and

reliable survey instrument, it remains possible that respondents may have experienced confusion when considering some of the terms in the survey.

Studies on the use of social media for personal finance in the future could have different directions. Future studies may further examine the relationship revealed using nonlinear analysis and focus on the mediation and moderation effects of various factors, including demographics. For example, too much use of social media for personal finance may reduce positive outcomes. Future studies can also refine the survey instrument and draw samples from larger populations in different countries across times. Other data collection methods should include in-depth multiple case studies as well as large-scale surveys involving different types of customers. Proper attention should be given to studies with group comparison and emphasis on individual characteristics. Examining the factors and outcomes in depth, such as the different level of compatibility, would also be of interest. As the research on social media evolves toward a more mature stage, more interesting and relevant findings would suggest effective use patterns and practices of SMU in the future.

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