Available online at www.sciencedirect.com

Borsa İstanbul Review

Borsa İstanbul Review 23-6 (2023) 1399–1413

http://www.elsevier.com/journals/borsa-istanbul-review/2214-8450

Full Length Article

In the pursuit of financial innovation-Led financial inclusion: A proposed construct for financial trust

Roshan Ali [a,*], Muhammad Meraj [b], Muhammad Shujaat Mubarik [c]

[a] Department of Management Sciences, Mohammad Ali Jinnah University, Karachi, Pakistan

[b] Department of Economics and Acting Dean, Faculty of Social and Basic Sciences, Mohammad Ali Jinnah University (MAJU), Lal Kothi Bus Stop, Main Shahrah-e-Faisal, 22-E, Block 6 PECHS, Karachi, 75400, Pakistan

[c] College of Business Management (CBM), Institute of Business Management (IoBM), Korangi Creek, Karachi, Karachi City, Sindh 75190, Pakistan

Received 15 February 2023; revised 8 September 2023; accepted 8 September 2023

Available online 16 September 2023

Abstract

The study develops a comprehensive scale of trust in the financial system, to account for its various dimensions. A multistage approach is adopted in the study for this purpose. After reviewing relevant literature and conducting focused group discussions, we collected data from investors through a questionnaire. Finally, we use principal component analysis (PCA) to perform exploratory factor analysis (EFA) in order to investigate the relevant items in each dimension with confirmation of reliability and validity. Our results suggest that 48 items, distributed across five sub constructs of trust, can be applied to assess trust in the financial system. Among the many sub constructs of trust, we ultimately conclude that structural assurance, competence, integrity, benevolence, and transparency are most applicable to financial trust. Because trust is an important consideration along with other barriers to financial inclusion, the study offers many insights for managers of financial institutions, regulatory authorities, and policy makers.

JEL classification: D18; E02; E44; G14; G18; G21; G23; G24; G28

Keywords: Financial inclusion; Financial trust; Integrity; Scale; Structural assurance

1. Introduction

Trust is related to the beliefs of individuals about the likelihood of obtaining a positive outcome from interactions with others, indicating whether others behave as promised (Cheung & Lai, 2022). The probability that a person attributes to the likelihood of being deceived is also referred to as trust (Guiso, Sapienza, & Zingales, 2008). According to Coleman (2001), trust encompasses a collection of social norms that promote cooperative behavior. These definitions reveal that social trust, as a social norm, fosters mutual confidence among members of society. It illustrates that reciprocity and reliability are anticipated in human relationships. Societies characterized by high levels of trust require fewer formal agreements and institutions for the fulfillment of commitments; hence, trust plays a role as an informal institution (Chen, Cai, & Jebran, 2021; Cheung & Lai, 2022). Past studies suggest that environments with high social trust enhance ethical behavior (Chen et al., 2021). Moreover, others conclude that a lack of interpersonal trust results in breaches of ethical standards (Pasiouras, Bouri, Roubaud, & Galariotis, 2021). Trust reflects the degree to which reciprocity and trustworthiness are expected in human interactions (Shi, Ho, & Liu, 2023).

Studies in a variety of fields have documented the significance of trust in economic results. The importance of trust in the financial sector of the economy cannot be overstated.

* Corresponding author. V265+9WJ, Markwick Rd, Deli Colony KMC Work Area, Karachi City, Sindh, Pakistan.

E-mail addresses: Roshan.ali@gmail.com (R. Ali), m.meraj@jinnah.edu (M. Meraj), shujaat.mubarik@iobm.edu.pk (M.S. Mubarik).

Peer review under responsibility of Borsa İstanbul Anonim Şirketi.

https://doi.org/10.1016/j.bir.2023.09.002

Without trust, the financial system is distorted, and macroeconomic stability and a country's potential for growth cannot be assured (Brychko, Bilan, Lyeonov, & Mentel, 2021). Several studies demonstrate the significance of trust in different aspects of the economy and business, such as economic stability (Brychko et al., 2021; van der Cruijsen & Samarina, 2023), economic growth (Sharma & Changkakati, 2022), financial development (Anggrayani & Sri Suprapti, 2019; Brychko et al., 2021), foreign investment (Badarinza, Ramadorai, & Shimizu, 2022; Bottazzi, Da Rin, & Hellmann, 2016; Han, Wang, & Wei, 2022), financial inclusion (Le, Chuc, & Taghizadeh-Hesary, 2019; Sharma & Changkakati, 2022; Xu, 2020), stock market participation (Baidoo & Akoto, 2019; Guiso et al., 2008; Tiniç, Tanyeri, & Bodur, 2021), banking (Brychko et al., 2021; Ghosh, 2021; Úbeda, Mendez, & Forcadell, 2023), and the adoption of financial technology (Al-Smadi, 2022; Hamakhan, 2020).

An increasing number of papers have acknowledged the destabilizing impact of trust on macroeconomic stability and prosperity (Brychko et al., 2021). According to Mazurek and Mielcová (2017), consumer confidence in the economy may help forecast either economic growth or recessions. Utak (2003) concludes that consumer demand is a function of trust and has an impact on economic growth. Consumer demand has a considerable short-term impact on fluctuation in the gross domestic product (GDP). The trust of citizens in institutions such as the central bank has a crucial impact on price stability and the effectiveness of monetary policy (Christelis, Georgarakos, Jappelli, & Van Rooij, 2020; van der Cruijsen & Samarina, 2023). Trust improves efficiency in both human and physical capital, lowers transaction costs, and increases information exchange to promote economic outcomes (Majeed, 2019). The papers mentioned above suggest that the relationship between trust, macroeconomic stability, and economic growth is crucial.

The volatility of trust in financial institutions has implications for financial development. Furthermore, the development of financial intermediaries is adversely affected by a lack of trust in the financial sector (Brychko et al., 2021). Spending, saving, borrowing, and investing depend on people's confidence and trust in financial institutions such as banks, insurance companies, and investment and pension funds (Baidoo & Akoto, 2019; Burke & Hung, 2021; van Raaij, 2016). Financial institutions, mainly banks, also serve as intermediaries in mobilizing funds between the deficit and surplus units. However, the decision to invest these surplus funds with financial institutions is dominated by people's trust and confidence in these institutions (Baidoo & Akoto, 2019). Encouraging consumers to use banking services and products requires developing trust and expanding knowledge of new financial channels (Chen, Ali, Lateef, Imran Khan, & Khalid Anser, 2022). Among many other barriers, trust in a financial service provider is one reason that people do not use these products and services (Sharma & Changkakati, 2022). Informal institutions, such as trust, have a significant impact on the amount of loans made and the terms of those loans in the banking industry, and their influence is more pronounced in environments with weak institutional frameworks and with lax legal protection or enforcement (Abdelsalam, Chantziaras, Batten, & Aysan, 2021).

Investment in stocks and other complex financial products demands confidence about the fairness of the system; therefore, trust in the system takes central importance (Burke & Hung, 2021). Numerous social theorists have accepted the relationship between risk and trust. Risky situations call for greater trust; this is why these two notions are intimately associated (Mayer, Davis, & Schoorman, 1995). Investment in stocks and other financial assets also carries an element of risk; hence, trust is also a prerequisite. According to Abdelsalam et al. (2021), trust is particularly significant for shareholders of companies with headquarters in regions with weaker institutional settings. The large capitalization of the stock and bond markets indicates people's trust in them (Stout, 2010). The variation in stock market participation (SMP) across countries may be a function of a lack of trust in general, but it can be explained by mistrust in the institutions that facilitate SMP (Guiso et al., 2008). The role of trust is crucial in bridging the gap between the customer's knowledge and the knowledge required to make fully informed investment and saving decisions (Zingales, 2011). Based on their knowledge of the issuing company, investors assign a price to stocks, and they are concerned about the source of the information's reputation. The validity of information providers such as brokerage houses and analysts depends, once again, on trust (Tiniç et al., 2021).

As part of the pursuit of financial development and economic growth, financial inclusion—defined as a process that ensures ease of access, availability, and use of financial services for all members of society—is one of the cornerstone strategies for pursuing inclusive economic development (Eldomiaty, Hammam, & El Bakry, 2020). Financial inclusion is crucial for financial development as it gives people access to low-cost financial services, which in turn promotes economic growth (Chen et al., 2022). Trust in service providers and their supervisory organizations is a major part of addressing the various obstacles to financial inclusion across countries (Le et al., 2019; Sharma & Changkakati, 2022; van der Cruijsen & Samarina, 2023). In this context, the influx of disruptive digital financial technologies (fintech) offers a great opportunity for accelerating financial inclusion. This is why various countries are aggressively adopting fintech and other related technologies. Access to financial services has been enhanced by the growth of financial digitalization (Al-Smadi, 2022), but it has been accompanied by an increase in technology-related fraud and phishing. Hence, trust is becoming a critical issue in the use of digital technologies to achieve financial inclusion.

This discussion emphasizes the significance and critical role of trust in macro- and microeconomic contexts. The lack of sufficient trust could hamper economic development and growth, reduce personal well-being, and delay long-term prosperity. Countries with high interpersonal, institutional, and systemic trust tend to prosper more rapidly than others due

to the creation of large corporations, diversified financial products, an inclusive financial environment through fintech, and a large pool of traders and investors. Because trust has many implications for policy makers and managers, a clear description of trust and its precise measurement are required, followed by steps to enhance it (Burke & Hung, 2021; Girón, Kazemikhasragh, Cicchiello, & Panetti, 2022; Hildebrand & Bergner, 2021; van Raaij, 2016).

On the basis of this discussion, we conclude that financial trust refers to trust in the overall financial system, including banks, corporations, stock markets, brokers, mutual funds, and supervisory institutions, such as the central bank, the Securities and Exchange Commission, and tax authorities. Our working definition is "the belief that the bank, insurance company, or other institutions (including supervisory institutions) will act in the customer's interest, that the institutions do not exploit the information (asymmetry, vulnerability) of customers, and that the institutions are not only motivated by self-interest (van Raaij, 2016, p. 168).

Prior studies focused on trust in the financial environment use trust as a variable, explicitly measuring it through survey questions, and ignore its abstract nature. Moreover, the questions asked measure general trust and tend to obtain a subjective, rather than objective, measurement. In contrast, trust theory and the prevailing literature on the concept suggest that it is a construct with multiple dimensions; thus, attempts at its direct measurement yield shallow information that might be misleading. Moreover, gauging trust as a direct variable shows the adoption of positivist philosophy, rather than post-positivism, because its direct measurement through dichotomous questions signifies its concreteness and ignores its abstractness. A plethora of literature is dedicated to describing the notion of trust and identifying its dimensions. Very few papers have captured its comprehensive, multidimensional, and nonfigurative nature. Hence, a broad scale is required to account for the multidimensionality of trust and encompass various constituents of the financial system.

This study contributes to the literature in several ways. First, we outline the various dimensions of trust reported by researchers over the past six decades. Subsequently, we develop a scale for evaluating trust in the financial system by rigorously investigating its dimensions and relevance in the financial context. To the best of our knowledge, this is the first attempt to measure trust comprehensively and, in so doing, portrays its multidimensionality, in what we call "perceived trust in the financial system" (PTFS). This scale enhances policy makers' ability to quantify the level of trust and design policies to increase them. Last, this study enables other researchers to empirically test the findings in different domains because the concept has important implications at the interpersonal, organizational, and economic levels.

The paper is organized as follows. Section 2 presents the theoretical underpinnings and reviews the literature on the dimensions of trust. Section 3 presents the methodology used in the developing the constructs. Finally, in Section 4, we present the results, followed by a discussion in Section 5 and conclusion in Section 6.

2. Literature review

2.1. Theoretical background

Trust is considered an essential factor in financial dealings, particularly when someone is vulnerable to activities by the other party or when one of the parties has information and a commanding advantage. Lack of trust in the economic context when the monetary gain/loss of one party is exposed to the performance of another party conceived to be honest and comparatively efficient sometimes results in subsequent conflict regarded as agency conflict. Therefore, the study draws its theoretical roots from the agency theory by Jensen and Meckling (1976). They formulated one of the grand theories, "agency theory," as a theory of the firm in which they redefined the meaning of the firm as a "nexus of contracts," because contractual relationships are at the heart of the firm, including contracts with employees, suppliers, customers, and creditors. The theory discusses the notion of an agency relationship, demarcating it as binding, in which a person (or persons) known as the principal (or principals) delegate decision-making authority, based on his relevant qualifications and distinguished expertise, to other people referred to as the agent(s) against the predefined reparation. Moreover, the agent is presumed to prioritize the principal's interests and is entrusted with using her best skills to maximize the benefits for the other party. According to agency theory, self-interested managers maximize personal benefits at the expense of other stakeholders, resulting in agency conflicts/problems. Chen et al. (2021) claim that trust can act as a mechanism for reducing agency conflicts because managers who work in a high-trust environment are less likely to pursue private benefits at the expense of the principal's well-being, thus reducing agency problems. In high-trust societies, managers seldom engage in unethical behavior and earnings manipulation; thus, the agency problem is probably mitigated (Shi et al., 2023). Central banks, as agents for citizens (principals), are responsible for price stability, recognize the role of trust in the competence and independence of institutions (van der Cruijsen & Samarina, 2023). Asymmetrical information is one source of agency problems between management and shareholders, and enhanced disclosure creates trust across stakeholders and helps to address this problem (Zahid, Taran, Khan, & Chersan, 2023). Nonetheless, Jensen and Meckling (1976) mainly focus on corporations to clarify agency relationships; however, the literature suggests that the concept is applicable anywhere if such a principal-agent relationship exists.

2.2. Empirical literature

Strong formal institutions, such as investor protection and financial accounting systems, act as substitutes for social standards (Shi et al., 2023). However, when formal organizations such as investor protection, the information environment, and government regulations, are still in their infancy, informal organizations (e.g., social trust) are more likely to replace formal systems and affect individual and business decisions

(Chen et al., 2021). Trust is considered a substitute for weak institutions and governance. Trust is especially crucial for businesses operating in countries with weak institutional environments as well as for businesses controlled by foreign investors in the long term (Abdelsalam et al., 2021). Trust is essential in financial decision-making, particularly when increasingly diverse financial products require knowledge and capacity that not all individuals have (Lusardi & Mitchell, 2011). Trust facilitates transactions because it saves on the costs of monitoring and screening; it is an essential lubricant that greases the wheels of the economic system (Zingales, 2011). Regulatory and governance reforms after the financial crisis of 2008–2009 eroded trust and increased compliance costs, which depressed the profits of many financial institutions, especially banks (Lui & Lamb, 2018).

Brychko et al. (2021) empirically shows the detrimental effects of the trust crisis in the financial sector on macroeconomic stability. However, the effects can be mitigated by developing the financial sector and monetary policy mechanisms. Gokmenoglu and Amir (2021) report the importance of trust in trustor-trustee relationships in the service sector, particularly for financial service providers. The customer's perception about the fairness and trustworthiness of the service provider plays a significant role in trust development, followed by healthy relationships. Meng, Wang, Zhang, and Zheng (2021) suggest that firms located in countries with higher social trust find more opportunities to achieve innovation through expenditure on research and development (R&D) because trust enhances risk-taking behavior by investors and reduces information asymmetry, monitoring, and transaction costs. Investors in these countries invest in risky projects requiring higher cash outflows in R&D. Moreover, in such societies, the cost of debt is lower, with more access to funding sources for firms pursuing innovation. Úbeda et al. (2023) focus their research on the relationship between trust in banks and financial inclusion. They claim that the two have a significant association. However, the relationship is not unidirectional, because trust in banks is a prerequisite for financial inclusion. Similarly, financial inclusion improves trust in banks. Xu (2020) claims that, holding other factors constant, social trust has a positive impact on financial inclusion. According to Chen et al. (2022), by reducing the risk of default, payment crises, and augmented security, banks can win public trust and encourage them to use their services.

Abdelsalam et al. (2021) report a significantly negative relationship between a foreign shareholder's trust and the market risk of the firm. Furthermore, relationships are more pronounced in countries characterized by lower investor protection and a weaker institutional environment. Chen et al. (2021) argue that earnings manipulation for reports to shareholders is common in various countries. However, social trust has a negative effect on earnings management and is positively related to ethical management practices. Again, the negative impact of social trust on earnings management is stronger in regions with a weaker institutional environment. In contrast, Shi et al. (2023) claim that firms located in countries with higher social trust are exposed to more risk and stock price crashes due to the concealment of negative information by the management. To discourage such practices, low-trust societies remain at an advantage because shareholders impose strict checks on management. Moreover, the impact of trust becomes less important when formal institutions are stronger and protect investors' rights.

2.3. Trust: measurement approaches and issues

Knack and Keefer (1997) consider trust a manifestation of social capital and provide a general definition. They denote trust as the extent to which people are careful when dealing with others. Guiso et al. (2008) argue that, in the context of financial dealing, trust reflects the objective characteristics of the financial system.

van Raaij (2016) present three kinds of trust: personal trust, institutional trust, and systemic trust. Personal trust refers to trust in other people. Institutional trust is a customer's trust in financial institutions, such as a bank, broker, and investment fund. Lastly, systemic trust is trust in the viability of the overall financial system, which comprises money markets, capital markets, financial intermediaries, and supervisory bodies. Burke and Hung (2021) distinguish between general and financial trust and determine the relationship between trust and the propensity to follow financial advice. Lins, Servaes, and Tamayo (2017) assert that the importance of trust has become more prominent in well-functioning markets and financial stability, particularly after the subprime crisis. Guiso et al. (2008) acknowledge the role of systemic trust in explaining the discrepancy in SMP across countries. They further assert that engaging in financial activity does not require trust in a particular institution; rather, trust in the overall financial system is desirable. Therefore, we inquire into trust in a financial system by developing a new scale, PTFS.

The literature on trust measurement reports various proxies used to quantify broad and narrow trust in financial institutions. Some of these studies attempt to measure trust explicitly, while others do so implicitly.

Research on explicit measurement uses specific questions about the level of trust that people have in particular financial institutions, such as banks, insurance companies, and provident funds, including those on the World Values Survey (e.g., Ahunov & Van Hove, 2020; Ampudia & Palligkinis, 2018; Fungáčová, Hasan, & Weill, 2019). In contrast, studies that try to measure trust implicitly ask respondents to agree or disagree with a particular statement about particular managerial or organizational functions. These studies incorporate questions aimed at the integrity and competence of managers and institutions, such as those on the General Social Survey (e.g., Brown, Goda, & McGarry, 2012; Naumann, 2018; van Der Cruijsen, Haan, & Roerink, 2021).

According to van der Cruijsen et al. (2023), a survey with different proxies shows a positive correlation among them; nevertheless, they are far from perfect. Keeping in mind the literature available on trust measurement, there is a lack of consensus about the proxies adopted for measuring it. These proxies differ in terms of scope, the financial institutions that they cover, the trust dimensions that they consider, their

objectivity, and the functions of trustees on which they focus. Our study fills these gaps by thoroughly reviewing the prior and current literature. This study develops a scale that includes a multidimensional nature of trust, the wide range of financial institutions and their supervisory bodies, the perception of consumers, and objective measurement.

Based on the centrality of trust in financial decision-making, we comprehensively review the literature on trust, its dimensions, and its importance in different social interactions and business contexts in the past sixty years. Its history can be traced back to the seminal work by Deutsch (1958, 1960) on trust and suspicion. Table 1 shows the multiple dimensions of trust reported by various authors.

Although Table 1 lists many dimensions of trust discussed in the literature, not all are equally important for our study. First, many dimensions listed in Table 1 have the same connotations and thus are interchangeable. Moreover, a few are very comprehensive, so they encompass some narrow ones. Second, we selected a few dimensions that are the most appropriate and dominant regarding trust in the financial system.

The factors repeatedly listed as trust drivers in the literature, particularly in the economic context, can be grouped into five determinants: competence, integrity, customer orientation, transparency, and structural assurance. Next, we discuss the relevance of the dimensions used in our study.

2.3.1. Competence and ability

Competence refers to confidence in the ability of the institution's management to create value for stakeholders by managing resources effectively and efficiently (Pirson & Malhotra, 2008) and management skill regarding financial products, markets, and customers (van Raaij, 2016). It is multidimensional, encompassing technical and managerial skills and, therefore, meets diversified stakeholders' need to cluster these skills (Mayer et al., 1995; Pirson & Malhotra, 2008). Competence may not enhance trust, but incompetence is a major reason for distrust (van Raaij, 2016). Trust, a dynamic concept, demands ongoing improvement in technical and managerial competency (Ahmed et al., 2020). Investment in technological competence, such as artificial intelligence, helps customers regarded as benevolent and augments trust in financial institutions (Hildebrand & Bergner, 2021). Competence is an essential characteristic of those who are trusted, which positively impacts decisions by the trustor (Bello Bada & Karupiah, 2021). Goodwill and competence play a crucial role in a business relationship, particularly in strategic information sharing (Newell, Ellegaard, & Esbjerg, 2019). Service provider expertise significantly mediates the trust and decision to purchase insurance (Mohy-Ul-Din, Samad, Rehman, Ali, & Ahmad, 2019). Trust regarding competence has a positive impact on the adoption of digital technologies and recommendations regarding online shopping (Low et al., 2021). Past studies used various terms to discuss competence, which is largely the same concept as ability and expertness.

Table 1
Dimensions of trust.

Dimensions and Source(s)
A. Competence & Ability
Ahmed, Bangassa, & Akbar, 2020; Butler, 1991; Cook & Wall, 1980; Deutsch, 1960; Giffin, 1967; Kee & Knox, 1970; Low, Cham, Chang, & Lim, 2021; Mishra, 1996; Schoorman, Mayer, & Davis, 2007; Svare, Gausdal, & Möllering, 2020; van Raaij, 2016; Zhang & Li, 2019
B. Benevolence & Customer orientation
Ahmed et al., 2020; Bello Bada & Karupiah, 2021; Ennew & Sekhon, 2007; Hildebrand & Bergner, 2021; Larzelere & Huston, 1980; Mayer et al., 1995; Mishra, 1996; Solomon, 1960; Svare et al., 2020; van Raaij, 2016; Zhang & Li, 2019
C. Integrity & Fairness
Butler, 1991; Ennew & Sekhon, 2007; Lieberman, 1981; Low et al., 2021; Mayer et al., 1995; Ring & Van de Ven, 1992; Schoorman et al., 2007; Svare et al., 2020; van Raaij, 2016; Zhang & Li, 2019
D. Openness & Transparency
Ahmed et al., 2020; Butler, 1991; Gabarro, 1978; Hart, Capps, Cangemi, & Caillouet, 1986; Mishra, 1996; van Raaij, 2016
E. Value Congruence
Ennew & Sekhon, 2007; Hart et al., 1986; Sitkin & Roth, 1993; van Raaij, 2016
F. Structural Assurance
McCole, Ramsey, Kincaid, Fang, & Li, 2019; Pavlou & Gefen, 2004; Wingreen, Mazey, Baglione, & Storholm, 2019
G. Reliability
Frost, Stimpson, & Maughan, 1978; Johnson-George & Swap, 1982; Mishra, 1996
H. Intentions
Cook & Wall, 1980; Deutsch, 1960; Giffin, 1967; Good & Gambetta, 1988
I. Reputation
Giffin, 1967; Ring & Van de Ven, 1992
J. Consistency
Butler (1991)
K. Stability & Solvency
van Raaij, 2016

(*continued on next page*)

Table 1 (*continued*)

Dimensions and Source(s)
L. Loyalty
Butler (1991)
M. Motivation
Hovland, Janis, & Kelley, 1953; Kee & Knox, 1970
N. Honesty
Larzelere and Huston, 1980
O. Cognition
Bello Bada and Karupiah, 2021
P. Affection
Bello Bada and Karupiah, 2021

2.3.2. Integrity and fairness

Financial institutions have integrity in terms of treating customers fairly, impartially, and without corruption (van Raaij, 2016). Integrity means the honesty and truthfulness of a person or party (Butler, 1991) and is a fundamental condition of trust, which is the focus of business ethics. Thus, many researchers regard it as an antecedent of trust (Butler, 1991; Gabarro, 1978; Lieberman, 1981; Mayer et al., 1995; McFall 1987; Pirson & Malhotra, 2008). Integrity and trust are strongly associated, indicating the perception of trustors that trustees will adhere to principles that they finds acceptable (van Raaij, 2016). Integrity positively affects the behavior of online consumers regarding the adoption of digital technology and purchasing products (Low et al., 2021). Some researchers employ "value congruence," defined as "the compatibility of a trustor's values and beliefs with those of the trustee," as an alternative concept to "integrity." McFall (1987) illustrates that adherence to and acceptability of principles are important in development of trust. Furthermore, adhering to principles is called personal integrity, and following principles that are acceptable to a trustee signifies moral integrity. Sitkin and Roth (1993) also stress the concept of value congruence and state that trustors' acceptability of values and beliefs is a mandatory condition for integrity.

2.3.3. Benevolence

The benevolence of a company or financial institution refers to its concern for clients' interests, not merely their own—hence, the extent to which financial institutions are concerned about their customers' welfare from the customer perspective (Ennew & Sekhon, 2007). It is an attitude toward customer orientation and is associated with financial institutions' marketing and customer policies (van Raaij, 2016) and the perception of a positive orientation by the trustee toward the trustor, which is of critical importance in development (Mayer et al., 1995). Benevolence concerns the care, protection against harm, and confidentiality of information. Customer and employee relations is helpful in boosting trust (Ahmed et al., 2020; Bello Bada & Karupiah, 2021). Benevolence positively influences online consumer decisions about shopping, with variable effect size across gender (Low et al., 2021). In the literature, the benevolence, customer orientation, intentions, and motives of a trustee are cited as dimensions of trust in different contexts, but they all have the same connotation.

2.3.4. Transparency and openness

Openness and transparency refer to adequate communication of information about an institution's contracts, procedures, costs, and future, which might reduce trust in the short run, but build trust building in the long run (van Raaij, 2016). Enhanced transparency regarding bank operations and information regarding their bank compliance with regulatory rules boosts customer trust (Ahmed et al., 2020). Transparency in corporate data is a critical factor in investor confidence, and so is the performance motive of financial institutions (Wanke, Hassan, Azad, Rahman, & Akther, 2022). Complete and transparent information indicates the quality of financial reporting and reduces decision risk (Dewi, Azam, & Yusof, 2019). Financial sector transparency is crucial, particularly in a time of crisis, because it leads to the promotion of banks with enhanced transparency, demonstrating their soundness and resulting in more market power and dominance (Kusi, Agbloyor, Gyeke-Dako, & Asongu, 2020).

2.3.5. Structural assurance

Structural assurance (SA) refers to market characteristics intended to mitigate concern over safety and security, such as contracts, guarantees, buyer feedback, and seals of approval. Consumers believe that infrastructure will protect the integrity of their transaction (Wingreen et al., 2019). Structural assurance magnifies the importance of institution-based mechanisms, leading to assurance related to confidentiality and information protection. Prior research shows that SA is positively related to trust (Sarkar, Chauhan, & Khare, 2020). In investigating the role of SA in establishing trust in mobile banking, Pavlou and Gefen (2004) suggest that SA plays a crucial role in mobile banking because it requires trust that is transferred to third parties. Informational or financial transactions cannot be conducted safely and securely without an effective institutional mechanism to ensure customers' safety, called SA (McCole et al., 2019). Broad-based trust is differentiated from narrowly based trust, but the two are positively correlated. Trust in supervisory authorities boosts trust in the financial sector (Cruijsen et al., 2021). SA has differential effects on vendor-based and technology-based trust, as shown in previous research (Wingreen et al., 2019).

3. Methodology

This study adopts a threefold approach (following Carpenter, 2018; Khan & Mubarik, 2022; Mubarik, Kusi-

Sarpong, Govindan, Khan, & Oyedijo, 2021). First, we identify all the potential dimensions of trust by revisiting trust theory and reviewing the available empirical and systematic literature on the concept of trust. Second, we filter the many dimensions proposed in the literature (Ahmed et al., 2020; Cook & Wall, 1980; Kee & Knox, 1970; Mayer et al., 1995; Schoorman et al., 2007; van Raaij, 2016; Zhang & Li, 2019), omitting some with overlapping connotations, and describe the dimension as it applies to the financial context, with the help of expert opinions expressed in focused group discussion (FGD). Third, we perform exploratory factor analysis (EFA) to determine the sub-dimensions, followed by confirmatory factor analysis (CFA) to validate the construct. Fig. 1 offers a flowchart of the methodology adopted in our research.

3.1. Exploring the dimensions and sub dimensions

Trust has long been widely discussed in marketing, management, and financial contexts. To identify the potential dimensions of trust, we started with the seminal work on the concept in 1960 and ended with the most recent one. The literature suggests the vagueness of the construct, which has many sub constructs, as outlined in Table 1. The exploratory process is divided into two phases: literature review and focused group discussions (FGD).

3.1.1. Literature review

To determine the dimensionality, we started with the prior literature on the concept of trust, as shown in Table 1, which lists 17 dimensions of trust. Then, we continued to review the literature, focusing our attention on financial trust. The factors repeatedly mentioned by scholars writing on financial trust are competence, benevolence, integrity, value congruence, transparency, and structural assurance. Through FGD, they were reduced to five factors.

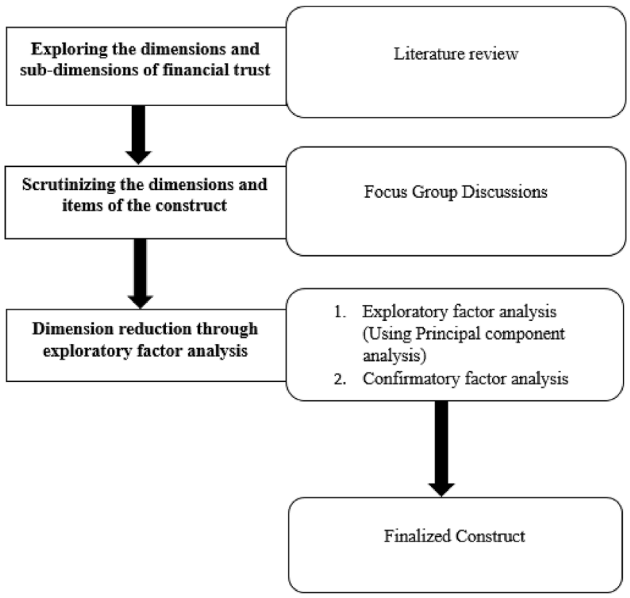


Fig. 1. Flowchart of the methodology.

3.1.2. Focused group discussion

As mentioned earlier, this study is the first attempt to measure the abstract notion of trust in the financial context, and to do so, we formed multiple focus groups. In the first FGD, we distilled the five dimensions of trust: competence, benevolence, integrity, transparency, and structural assurance. In the first round, the purpose of construct development was briefed to the experts so that objective-oriented discussion may prevail. The five participants in this FGD work in different areas of the financial industry, such as banking, mutual funds, and brokerage. According to Fabbe-Costes and Roussat (2013), eight members is a suitable size for a focus group, the availability of experts compelled us to compromise on size. The first FGD lasted for one and a half hours.

The second FGD was held two weeks later to discuss the sub dimensions and the items generated to measure each sub construct. A total of 59 items was generated for measuring all five dimensions. Discussing each item and its relevance to a specific dimension took around 2 h, and yielded 48 items for measuring trust in the financial system. The deleted items were either unnecessary or similar to others. Table 2 lists the final items, determined during the second FGD. The third FGD was organized after EFA to consult on and assign names to the groups of factors, finalized as subconstructs of the PTFS: structural assurance (SA), integrity (I), benevolence (B), competence (C), and transparency (T). (The five subconstructs and the items that correspond to them are listed in Table 7.

3.1.3. Content adequacy assessment

For the second FGD, we generated questions for all 48 items. To measure the responses to questions, we adopted a Likert scale from 1 to 5. Pretesting is assumed to be mandatory for identifying any measurement errors due to vague questions, long sentences, double-barreled questions, or biased questions. The sample size for pretesting ranges from 5 to 100, depending on the diversity in the population (Carpenter, 2018). For the purpose of pretesting, the questionnaire was sent to all FGD participants and four scholars. Minor changes in the wording of the questions were suggested and subsequently incorporated.

Before a full-fledged survey is conducted, we perform a pilot test, to refine the data collection instrument and procedure. The pilot test should have 50–100 participants (Carpenter, 2018; Mubarik et al., 2021). For the purpose of pilot testing, we distributed a questionnaire via Google Forms to 80 respondents, who are retail stock market investors; among the 80 recipients, 61 completed and submitted the survey. Six responses were rejected due to incompleteness. Finally, 55 responses were incorporated into the pilot EFA. The results of the pilot testing were sufficient for conducting a full-blown survey. However, for the sake of brevity, the results are not presented here.

3.2. Exploratory factor analysis

After the pretesting and pilot testing were performed, we employed EFA for the purpose of data reduction. First, we gathered data using purposive sampling, followed by Kaiser Meyer-Olkin (KMO) and Barlett's test of sphericity to ensure

Table 2
Final items.

Item number	Item
1	My bank consistently invests in technology to ensure the (cyber) security of my assets.
2	The management of my bank maintains due care and diligence in managing customer interests.
3	The trader/agent at my brokerage house has sufficient experience to perform his job efficiently.
4	My broker has knowledge about all the products available in the market (e.g. ready market, odd lot market, futures).
5	Research Reports industry wise, market wise, and script wise are offered to me for rational decision making by my brokerage house through their research department.
6	My financial institution (FI)/brokerage house offers Roshan Digital Accounts (RDA) for local and foreign investors for hassle-free investment.
7	The management of publicly listed companies is vigilant about detecting changes in the market environment to safeguard stakeholder interests.
8	The management of listed companies effectively controls front running/insider trading in order to protect the interest of investors.
9	The Securities and Exchange Commission of Pakistan (SECP) is vigilant in punishing those who commit fraud.
10	The SECP is active in controlling insider trading.
11	The FPT (fit and proper test) of the senior management of my FI/brokerage house is ensured by the SECP.
12	The state bank is vigilant about setting standards that keep the banking system resilient to economic shocks.
13	The state bank ensures that banks stick to the rules and regulations.
14	The Federal Board of Revenue (FBR) immediately informs citizens about any developments.
15	My bank is always concerned about the security of my assets.
16	My bank uses technologies that are easy to learn and use.
17	My bank informs me immediately of new developments.
18	The research reports generated by my brokerage house are prepared in such a way that they are understandable to ordinary investors.
19	My FI/brokerage house has a good investor guidance mechanism and complaints management system to deal with any issues.
20	The Central Depository Company (CDC) helps customers and responds to their queries.
21	The management of companies respects the concerns and requests of shareholders.
22	Managers of companies clearly communicate new developments to shareholders.
23	The state bank ensures fair competition among commercial banks to improve service quality.
24	The tax-filing procedure by the FBR is very easy to perform.
25	Banks ensure their compliance with their contractual agreement with customers stated in the documents.
26	My bank charges me fairly for services that it provides.
27	The trader of my FI/brokerage house never promises me for fake returns.
28	My brokerage house charges me a fair commission for my trades.
29	Top executives of companies care about their reputation and avoid any misrepresentation and fabrication of information.
30	Employees of public limited companies are strictly forbidden to engage in intraday trading of shares.
31	Managers of listed companies do not deliberately withhold announcement of dividends.
32	An external auditor is appointed on merit basis.
33	The state bank ensures that its employees well trained and professional.
34	The FBR staff are very professional.
35	My bank discloses enough information about its lending and other bank operations.
36	Annual reports and blogs by banks clearly mention challenges and threats that may harm their future performance and financial position.
37	Banks disclose enough information in their reports about investment in mega projects and a huge amount of lending.
38	My FI/brokerage house discloses all information to the client via the SAOF (standard account opening form), that is, the commission rate, investor guidance, risk disclosures.
39	My trade confirmation is received within 24 h of my transactions.
40	Annual reports of listed companies incorporate sufficient qualitative information to predict future performance.
41	Annual reports and blogs of listed companies clearly mention the challenges and threats that may harm their future performance and financial position.
42	Companies report enough information on suppliers to avoid any related-party transactions in order to achieve personal gain.
43	I am confident that existing policies and regulations by the SECP protect customers of financial service institutions.
44	The SECP has set standards that protect retail investors.
45	The SECP has developed laws that prevent large investors from market manipulation.
46	I am confident that existing policies and regulations by the State Bank of Pakistan (SBP) protect customers of financial services institutions.
47	The state bank makes its decisions independently.
48	The tax system in Pakistan is fair and transparent.

the factorability of the data. Finally, following the procedure by Carpenter (2018) and Mubarik et al. (2021), we ran the main EFA, and the results are in the next section.

4. Findings of exploratory factor analysis

4.1. Sampling and data collection

Because of the nature of the research question, our target group is retail stock market investors. In collecting the data for EFA, we employ purposive sampling. Various opinions exist regarding an adequate sample size for EFA; however, the sample size also depends on the number of items created to measure the construct (Khan & Mubarik, 2022). The lowest ratio, 5:1, was recommended by Gorsuch (1983). However, to obtain more robust outcomes, 20 cases per variable is suggested by many researchers (Worthington & Whittaker 2006). Because we started with 59 items across five dimensions, the sample initially targeted was more than 300. We distributed the questionnaire to 400 potential respondents

electronically and physically, of which 278 responses were returned. Data screening reduced the sample by 18 responses due to incompleteness. So we were left with 260, which is well above the threshold value recommended by Osborne (2014).

4.2. Factorability of the data

Before running the EFA, we need to ensure the factorability of the data, which means preliminary testing to confirm that the sample data are appropriate for factor analysis (Gill & Wilson, 2021). Several tests are used for that purpose, but we rely on Bartlett's test of sphericity and KMO. The KMO values are between 0 and 1, and a value closer to 1 is deemed ideal, but 0.5 is the minimum acceptable value (Gupta, Verma, & Pachare, 2021). According to Table 3, our KMO value is 0.876, which is well above the threshold value, and the *p*-value of Bartlett's χ^2 is 0.000, which is also significant. Therefore, the factorability of the data is confirmed.

4.3. Factor analysis

Because of its merits and common use in data reduction, we perform principal component analysis (PCA) for factor analysis. PCA is a well-known method for reducing the dimensionality of large datasets and improving interpretability, while minimizing information loss. It accomplishes this by producing new, uncorrelated variables that maximize variance one by one (Jolliffe & Cadima, 2016). Many recent studies report using PCA in the exploratory factors due to its robustness (e.g., Chuc et al., 2022; Dai, Xiong, & Zhou, 2021; Khan & Mubarik, 2022). We started factor analysis by identifying the number of factors in the data. Different approaches, such as Kaiser criteria (eigenvalue approach), scree plot, and parallel analysis, are employed for this purpose. Based on Kaiser criteria, factors with an eigenvalue greater than 1 should be retained. The higher the factor's eigenvalue, the greater the variance it explains. The results of Kaiser criteria presented in Table 4 suggest that eight factors, which cumulatively explain 63.719 percent of the variance, should be retained.

The scree plot is then used to confirm the presence of factors. According to the rule of factor retention, the number of factors above the elbow point should be retained (Singh & Bala Subrahmanya, 2020). The scree plot is in Appendix Fig. 1, showing that 5 factors are above the elbow point; therefore, we should proceed with 5 factors. Nevertheless, Kaiser criteria and scree plots are widely used in determining the number of factors, though many researchers claim that they overstate the number of factors (Mubarik et al., 2021). To address this problem, most researchers recommend performing parallel analysis (PA) to confirm the number of factors. Table 5 shows the criterion values from PA and compares them with the actual eigenvalues of the data. To retain a factor, the eigenvalue must be higher than the criterion values from PA. According to PA, five factors can be retained for further analysis because the criterion value of the sixth factor exceeds the eigenvalue. Finally, we proceed with five dimensions for further analysis, was they cumulatively explain 56.539 percent of the variance.

After we determined the number of factors, in the second step, we calculate the component matrix to finalize the retention and deletion of items. A minimum factor loading of 0.32 is required for an item to adequately represent the construct (Carpenter, 2018).

The results of the rotation matrix show the number of items that correspond to each factor: 12 items are associated with factor 1, and the remaining four factors all have a factor loading of nine items each. Moreover, Table 6 shows that no items have a factor loading of less than 0.32. Therefore, we include all the items for each factor.

4.4. Factor rotation

Varimax, an orthogonal rotation approach, was applied to clarify the association of each item with a particular dimension. The rotated solution shows that all items load strongly on one

Table 3
Factorability of the data.

Construct	KMO test	Bartlett's test of sphericity	
		χ^2	*p*-value
PTFS	0.876	7802.505	0.000

Note: KMO = Kaiser-Meyer-Olkin, which measures sampling adequacy. χ^2 = chi-square.

Table 4
Kaiser criteria of factor extraction.

Component	Total	% of variance	Cumulative %
1	11.718	24.412	24.412
2	5.275	10.990	35.401
3	4.212	8.774	44.175
4	3.745	7.802	51.977
5	2.190	4.562	56.539
6	1.255	2.616	59.155
7	1.123	2.341	61.496
8	1.067	2.223	63.719
9	.970	2.021	65.740
10	.932	1.942	67.682
11	.866	1.805	69.486
12	.850	1.771	71.257

Table 5
Parallel analysis.

Factors	Actual eigenvalues from the data	Criterion values from parallel analysis	Decision
1	11.7175	1.9481	Accept
2	5.2751	1.8472	Accept
3	4.2116	1.7656	Accept
4	3.7448	1.7037	Accept
5	2.1899	1.6446	Accept
6	1.2555	1.5939	Reject
7	1.1235	1.5449	Reject
8	1.0671	1.5037	Reject
9	0.9701	1.4564	Reject
10	0.9321	1.411	Reject
11	0.8662	1.3727	Reject
12	0.8410	1.3318	Reject

Table 6
Component matrix.

Item number	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
9	0.817				
33	0.808				
47	0.781				
13	0.777				
23	0.773				
10	0.716				
43	0.715				
46	0.702				
12	0.689				
44	0.669				
45	0.665				
11	0.595				
26		0.806			
31		0.758			
28		0.742			
25		0.740			
32		0.732			
27		0.709			
34		0.691			
30		0.660			
29		0.636			
15			0.806		
21			0.743		
16			0.738		
24			0.704		
22			0.696		
17			0.678		
19			0.654		
20			0.650		
18			0.638		
8				0.810	
6				0.780	
14				0.763	
1			0.303	0.698	
4				0.689	
5				0.660	
2				0.629	
3				0.577	
7	0.304			0.464	
37					0.784
42					0.748
35					0.746
38					0.744
36					0.742
41					0.687
40					0.681
48					0.659
39					0.576

Note: Rotation matrix suggests five factors/dimensions of a construct.

particular factor. Therefore, the structure is simple. Five factor solutions cumulatively explain 56.539 percent of the variance, with a contribution of 24.41 percent by factor one, 10.99 percent, 8.774 percent, 7.802 percent, and 4.562 percent by factors two, three, four, and five, respectively.

4.5. Confirmatory factor analysis (CFA)

One of the limitations of EFA is that it does not provide model fitness for the resulting factors (Long, 1983). It is also likely that certain factors might meet EFA criteria but do not necessarily fit the measurement model because of a lack of external consistency (Mubarik et al., 2021). To overcome these shortcomings, we performed CFA using AMOS, and the results are in Appendix Table 1.

4.5.1. Model fitness

Three types of model fitness criteria are ascertained: absolute, incremental, and parsimonious. Absolute fitness is measured through χ^2, root mean square error of approximation (RMSEA), and goodness of fit index (GFI) indices, whereas comparative fit index (CFI) and Parsimony Goodness of Fit Index (PGFI) are calculated to assess incremental and parsimonious fitness, respectively (Mujtaba, Mubarik, & Soomro, 2022). The results are in Appendix Table 1, showing that GFI and CFI are very near or above the recommended value of 0.90. Moreover, χ^2/df and RMSEA are near the threshold values, less than 5 and 0.10, respectively.

4.5.2. Internal consistency and reliability

The values of Cronbach's alpha, factor loading, and composite reliability (CR) determine internal consistency and construct reliability. The construct reliability and composite reliability values should be higher than 0.70, whereas a factor loading between 0.66 and 0.89 is required. Appendix Table 1 confirms the reliability and internal consistency of the sub constructs because the Cronbach's alpha and composite reliability are well above the recommended value of 0.70. Similarly, the factor loading values are within the desired range, with a few exceptions.

4.5.3. Construct validity

The convergent validity of each factor is ascertained using average variance extracted (AVE), and discriminant validity is assessed with the Fornell-Larcker criteria. Appendix Table 2 confirms the convergent validity of each factor because the AVE values are above or near to 0.5. AVE near to 0.5 is also acceptable because CR is greater than 0.7 and factor loadings are above 0.5 then convergent validity is established (Das, Handfield, Calantone, & Ghosh, 2000). Similarly, the square roots of AVE are well above the correlations among the five sub constructs. Finally, we conclude that the CFA results confirm the model fitness, reliability, and validity of the PTFS construct.

5. Discussion

The EFA results confirm that the items generated can be grouped into five factors: structural assurance, integrity, benevolence, competence, and transparency. The EFA findings meet the expectations of trust theory and the empirical literature related to the concept of trust. Many prior studies achieve results that are similar to ours. SA is considered a significant factor in augmenting financial trust, confirmed by the findings in previous papers (McCole et al., 2019; Wingreen et al., 2019). The role of integrity in trust elevation is reported by several authors (e.g., Butler, 1991; Mayer et al., 1995; Schoorman et al., 2007; Svare et al., 2020; van Raaij, 2016). Our findings also ensure the importance of integrity in

Table 7
Finalized constructs after EFA.

Code	Item
Structural Assurance (SA)	
SA-1	The Securities and Exchange Commission of Pakistan (SECP) is vigilant about penalizing those who commit fraud.
SA-2	The state bank ensures that employees of banks are well trained and professional.
SA-3	The state bank makes its decisions independently.
SA-4	The state bank ensures that banks stick to rules and regulations.
SA-5	The state bank ensures fair competition among the commercial banks to improve service quality.
SA-6	The SECP actively controls insider trading.
SA-7	I am confident that the existing policies and regulations of the SECP protect customers of financial services institutions.
SA-8	I am confident that the existing policies and regulations of the SBP protect customers of financial services institutions.
SA-9	The state bank is very vigilant about setting standards that make the banking system resilient in the event of economic shocks.
SA-10	The SECP sets standards that protect retail investors.
SA-11	The SECP develops laws that prevent large investors from market manipulation.
SA-12	The FPT of the senior management of my FI/brokerage house is ensured by the SECP.
Integrity (I)	
I-1	My bank charges me fairly for its services.
I-2	The management of listed companies does not deliberately delay announcements of dividends.
I-3	My brokerage house charges me a fair commission for my trades.
I-4	Banks ensure their compliance with contractual agreements with customers.
I-5	An external auditor is appointed on merit basis.
I-6	The trader at my FI/brokerage house never promises me for fake returns.
I-7	The FBR staff are very professional.
I-8	Employees of public limited companies are strictly forbidden to engage in intraday trading of shares.
I-9	The top executives care about the reputation of their companies and avoid misstatement and fabrication of information.
Benevolence (B)	
B-1	My bank is always concerned about the security of my assets.
B-2	Company managers respect the concerns and requests of shareholders.
B-3	My bank uses technology that is easy to learn and use.
B-4	The tax-filing procedure by the perform is very easy to perform.
B-5	Company managers clearly communicate new developments with shareholders.
B-6	My bank informs me immediately of new developments.
B-7	My FI/brokerage house has a good investor guidance mechanism and complaints management system to deal with any issues.
B-8	The CDC helps customers and responds to their queries.
B-9	Research reports generated by my brokerage house are prepared in a way that is understandable by ordinary investors.
Competence (C)	
C-1	The management of listed companies effectively control front running/insider trading to protect the interests of investors.
C-2	My FI/brokerage house offers RDA for local and foreign investors to ensure hassle-free investment.
C-3	The FBR immediately informs the public about any developments.
C-4	My bank constantly invests in technology to ensure the (cyber) security of my assets.
C-5	My broker is knowledgeable about all the products available in the market (e.g., ready market, odd lot market, futures).
C-6	Research Reports industry wise, market wise, and script wise are offered to me for rational decision making by my brokerage house through their research department.
C-7	Bank managers maintain due care and diligence as they act in the interest of customers.
C-8	Traders/agents at my brokerage house have sufficient experience to perform their job efficiently.
C-9	The managers of publicly listed companies are vigilant about detecting changes in the environment to protect stakeholder interests.
Transparency (T)	
T-1	Banks disclose enough information in their reports about investment in large projects and large loans.
T-2	Companies report enough information about suppliers, etc., to avoid related-party transactions that reap personal gains.
T-3	My bank discloses enough information about its lending and other bank operations.
T-4	My FI/brokerage house discloses all information to the client via the SAOF, i.e., the commission rate, investor guidance, and risk disclosure.
T-5	Annual reports and blogs by banks clearly mention challenges and threats that may harm their future performance and financial position.
T-6	Annual reports and blogs by listed companies clearly mention challenges and threats that may harm their future performance and financial position.
T-7	Annual reports by listed companies incorporate sufficient qualitative information to predict future performance.
T-8	The tax system in Pakistan is fair and transparent.
T-9	My trade confirmations are received within 24 h of my transactions.

enhancing trust in financial dealings. Concern about the interests and benefits of customers should not be overlooked; hence, benevolence is also recommended as a significant dimension of financial trust. The significance of benevolence in trust evaluation is widely reported (Ahmed et al., 2020; Bello Bada & Karupiah, 2021; Ennew & Sekhon, 2007; Mayer et al., 1995; Solomon, 1960; van Raaij, 2016). The competence and ability of a person and institution seeking trust are also key factors of concern and are significant, as found in this study. Competence as a dimension of trust is confirmed in the literature (e.g., Ahmed et al., 2020; Deutsch, 1960; Kee & Knox, 1970; Mishra, 1996; van Raaij, 2016). Finally, our

findings suggest that openness and transparency are key determinants of trust formation in the context of financial dealings. The importance of transparency as a trust booster is shown in recent literature (Ahmed et al., 2020; Kusi et al., 2020; Mishra, 1996; van Raaij, 2016). Our findings show the importance of structural assurance, integrity, benevolence, competence, and transparency as factors in building trust.

6. Conclusion, implications, and limitations

The basic goal of this study is to develop a scale for assessing trust in the financial system among users of financial products and services. We adopt a multistage approach in developing the construct, beginning with a literature review on the different dimensions of trust. In the next stage, we hold multiple focused group discussions to finalize the dimensions and items for measuring each dimension. To complete the elements of constructs and assess their validity and reliability, EFA and CFA are used in the final stage of the process. We conclude that, among the many sub constructs of trust, structural assurance, competence, integrity, benevolence, and transparency are the most relevant to financial trust. The EFA results suggest that 48 items, representing 5 sub constructs of trust, can be used to assess trust in the financial system. Moreover, the CFA results confirm that our newly developed constructs meet all the requirements for reliability and validity.

This study has implications for multiple stakeholders. The scale devised studies the association between PTFS and other social and economic factors, such as financial inclusion, stock market involvement, and economic development and growth. The construct developed integrates multiple players in the financial system, including the institution acting as the regulator; thus, items that reflect a particular segment can be isolated to gauge the level of trust in it among the participants. Our findings may be useful to managers at banks, brokerage firms, and publicly listed companies. The study's ability to represent how consumers of financial services view managers' abilities, benevolence, and honesty enable it to pinpoint areas that need improvement. Managers can gauge the perception of consumers regarding the quality of their services and formulate policies accordingly. The study might also be useful for the top management of publicly traded firms to assess how shareholders feel about the quality of reporting and other important corporate governance concerns. This study also has implications for regulatory bodies over financial institutions, such as the SECP and the central bank, because they can use the scale to identify customer perceptions of financial institutions and of these supervisory bodies. Subsequently, these supervisory bodies can play a crucial role in ameliorating any lack of trust, followed by a more inclusive environment. Increasing the tax base is a fundamental goal of economic policy makers. Our scale is helpful for tax authorities who wish to measure people's perceptions of the tax-filing procedure, staff integrity, and the fairness of the state tax system. Thus, reforms for improvement can be designed by bringing the people under the tax umbrella to achieve economic outcomes.

This study has some limitations. First, as a first attempt to measure trust in the financial system, this study focuses on a specific sample of respondents, namely, retail investors in the stock market. Therefore, subsequent research will be required to focus on different samples in order to ascertain generalizability. Another limitation of the study is its overlooking of the insurance sector, which has an influential position in the financial system; however, we included no questions related to this area in our items. Our results can be compared to other studies that include the insurance sector and replicate our study with different samples to check for discrepancies.

Funding

Non-funded.

Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethical approval

Not Applicable.

Informed consent

All the authors approved the paper for submission.

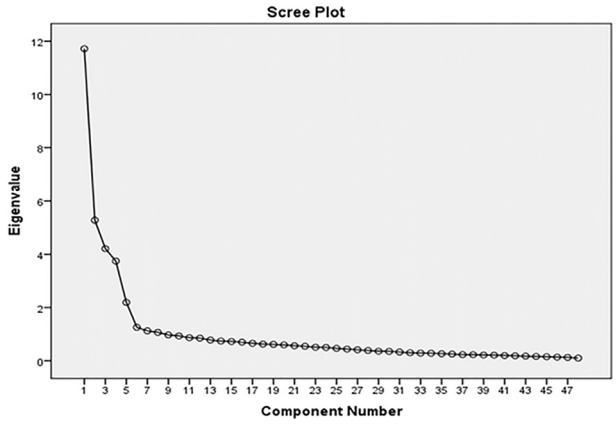
Declaration of competing interest

The authors declare no conflict of interest.

Acknowledgment

Special thanks to Shahid Ali, Muhammad Mujtaba, Yasir Jamal, and Anum Khan for arranging focused group discussion and assisting in data collection.

Appendix.



Appendix Fig. 1. Scree plot.

Appendix Table 1
Model fitness, reliability, and validity

Construct	Items	Loadings	AVE	CR	CB Alpha	Fitness Indices
Structural assurance	SA-1	0.814	0.533	0.931	0.93	χ^2/df = 3.245
	SA-2	0.844				RMSEA = 0.093
	SA-3	0.783				GFI = 0.906
	SA-4	0.824				PGFI = 0.627
	SA-5	0.806				CFI = 0.935
	SA-6	0.689				
	SA-7	0.725				
	SA-8	0.708				
	SA-9	0.656				
	SA-10	0.661				
	SA-11	0.613				
	SA-12	0.577				
Competence	C-1	0.819	0.48	0.89	0.886	χ^2/df = 4.593
	C-2	0.783				RMSEA = 0.118
	C-3	0.771				GFI = 0.894
	C-4	0.758				PGFI = 0.536
	C-5	0.696				CFI = 0.910
	C-6	0.582				
	C-7	0.678				
	C-8	0.546				
	C-9	0.528				
Benevolence	B-1	0.828	0.505	0.901	0.886	χ^2/df = 3.147
	B-2	0.744				RMSEA = 0.091
	B-3	0.731				GFI = 0.929
	B-4	0.667				PGFI = 0.557
	B-5	0.708				CFI = 0.948
	B-6	0.721				
	B-7	0.668				
	B-8	0.649				
	B-9	0.659				
Integrity	I-1	0.779	0.498	0.899	0.896	χ^2/df = 5.473
	I-2	0.739				RMSEA = 0.131
	I-3	0.739				GFI = 0.890
	I-4	0.734				PGFI = 0.534
	I-5	0.773				CFI = 0.894
	I-6	0.658				
	I-7	0.622				
	I-8	0.639				
	I-9	0.649				
Transparency	T-1	0.751	0.469	0.887	0.886	χ^2/df = 5.503
	T-2	0.726				RMSEA = 0.132
	T-3	0.747				GFI = 0.896
	T-4	0.675				PGFI = 0.538
	T-5	0.73				CFI = 0.883
	T-6	0.699				
	T-7	0.634				
	T-8	0.614				
	T-9	0.561				

Note: AVE = Average variance extracted, CR=Composite reliability, RMSEA = Root Mean Square Error of Approximation CB=Cronbach's, GFI = Goodness of fit index, PGFI=Parsimony goodness of fit index, CFI=Comparative fit index.

Appendix Table 2
Fornell-Larcker criteria

	T	C	B	I	SA
T	**0.685**				
C	0.091	**0.692**			
B	0.193	0.589	**0.71**		
I	0.325	0.281	0.184	**0.706**	
SA	0.257	0.357	0.381	0.35	**0.73**

References

Abdelsalam, O., Chantziaras, A., Batten, J. A., & Aysan, A. F. (2021). Major shareholders' trust and market risk: Substituting weak institutions with trust. *Journal of Corporate Finance, 66*, 101784.

Ahmed, S., Bangassa, K., & Akbar, S. (2020). A study on trust restoration efforts in the UK retail banking industry. *The British Accounting Review, 52*(1), 100871. https://doi.org/10.1016/j.bar.2019.100871

Ahunov, M., & Van Hove, L. (2020). National culture and (dis) trust in banks: Cross-country evidence. *Economic Notes, 49*(3), Article e12165.

Al-Smadi, M. O. (2022). Examining the relationship between digital finance and financial inclusion: Evidence from MENA countries. *Borsa Istanbul Review*. https://doi.org/10.1016/j.bir.2022.11.016. S2214845022001181.

Ampudia, M., & Palligkinis, S. (2018). *Trust and the household-bank relationship*. ECB Working Paper 2184.

Anggrayani, L. P. S., & Suprapti, S. (2019). E-Trust integration with technology acceptance model (TAM) in adoption of digital financial services (e-cash). *European Journal of Business and Management*. https://doi.org/10.7176/EJBM/11-8-09

Badarinza, C., Ramadorai, T., & Shimizu, C. (2022). Gravity, counterparties, and foreign investment. *Journal of Financial Economics, 145*(2), 132–152.

Baidoo, S. T., & Akoto, L. (2019). Does trust in financial institutions drive formal saving? Empirical evidence from Ghana. *International Social Science Journal*, 12200. https://doi.org/10.1111/issj.12200. issj.

Bello Bada, A., & Karupiah, P. (2021). Interpersonal dimension of trust on customer interaction in the banking sector. *Cogent Social Sciences, 7*(1), 1827525. https://doi.org/10.1080/23311886.2020.1827525

Bottazzi, L., Da Rin, M., & Hellmann, T. (2016). The importance of trust for investment: Evidence from venture capital. *Review of Financial Studies, 29*(9), 2283–2318.

Brown, J. R., Goda, G. S., & McGarry, K. (2012). Long-term care insurance demand limited by beliefs about needs, concerns about insurers, and care available from family. *Health Affairs, 31*(6), 1294–1302.

Brychko, M., Bilan, Y., Lyeonov, S., & Mentel, G. (2021). Trust crisis in the financial sector and macroeconomic stability: A structural equation modelling approach. *Economic Research-Ekonomska Istraživanja, 34*(1), 828–855. https://doi.org/10.1080/1331677X.2020.1804970

Burke, J., & Hung, A. A. (2021). Trust and financial advice. *Journal of Pension Economics and Finance, 20*(1), 9–26. https://doi.org/10.1017/S1474747219000026X

Butler, J. K. (1991). Toward understanding and measuring conditions of trust: Evolution of a conditions of trust inventory. *Journal of Management, 17*(3), 643–663. https://doi.org/10.1177/014920639101700307

Carpenter, S. (2018). Ten steps in scale development and reporting: A guide for researchers. *Communication Methods and Measures, 12*(1), 25–44. https://doi.org/10.1080/19312458.2017.1396583

Chen, Z., Ali, S., Lateef, M., Imran Khan, A., & Khalid Anser, M. (2022). The nexus between asymmetric financial inclusion and economic growth: Evidence from the top 10 financially inclusive economies. *Borsa Istanbul Review*. https://doi.org/10.1016/j.bir.2022.11.004. S2214845022001016.

Chen, S., Cai, W., & Jebran, K. (2021). Does social trust mitigate earnings management? Evidence from China. *Emerging Markets Finance and Trade, 57*(10), 2995–3016. https://doi.org/10.1080/1540496X.2019.1675046

Cheung, K. Y., & Lai, C. Y. (2022). External auditors' trust and perceived quality of interactions. *Cogent Business & Management, 9*(1), 2085366. https://doi.org/10.1080/23311975.2022.2085366

Christelis, D., Georgarakos, D., Jappelli, T., & Van Rooij, M. (2020). *Trust in the central bank and inflation expectation*. Available at: SSRN 3540974.

Chuc, A. T., Li, W., Phi, N. T. M., Le, Q. T., Yoshino, N., & Taghizadeh-Hesary, F. (2022). The necessity of financial inclusion for enhancing the economic impacts of remittances. *Borsa Istanbul Review, 22*(1), 47–56. https://doi.org/10.1016/j.bir.2020.12.007

Coleman, J. S. (2001). Capital social y creación de capital humano. *Zona Abierta*, (94), 47–81.

Cook, J., & Wall, T. (1980). New work attitude measures of trust, organizational commitment and personal need non-fulfilment. *Journal of Occupational Psychology, 53*(1), 39–52. https://doi.org/10.1111/j.2044-8325.1980.tb00005.x

Cruijsen, C., Haan, J., & Roerink, R. (2021). Financial knowledge and trust in financial institutions. *Journal of Consumer Affairs, 55*(2), 680–714. https://doi.org/10.1111/joca.12363

Dai, P.-F., Xiong, X., & Zhou, W.-X. (2021). A global economic policy uncertainty index from principal component analysis. *Finance Research Letters, 40*, 101686. https://doi.org/10.1016/j.frl.2020.101686

Das, A., Handfield, R. B., Calantone, R. J., & Ghosh, S. (2000). A contingent view of quality management-the impact of international competition on quality. *Decision Sciences, 31*(3), 649–690.

Deutsch, M. (1960). The effect of motivational orientation upon trust and suspicion. *Human Relations, 13*(2), 123–139.

Dewi, N. F., Azam, S. M. F., & Yusof, S. K. M. (2019). Factors influencing the information quality of local government financial statement and financial accountability. *Management Science Letters*, 1373–1384. https://doi.org/10.5267/j.msl.2019.5.013

Eldomiaty, T., Hammam, R., & El Bakry, R. (2020). Institutional determinants of financial inclusion: Evidence from world economies. *International Journal of Development Issues, 19*(2), 217–228. https://doi.org/10.1108/IJDI-08-2019-0147

Ennew, C., & Sekhon, H. (2007). Measuring trust in financial services: The trust index. *Consumer Policy Review, 17*(2), 62.

Fabbe-Costes, N., & Roussat, C. (2013). Refining a tool to prioritize environmental scanning for sustainable supply chains: A focus group approach. *20th International Annual EurOMA Conference Proceedings*, 7–12.

Frost, T., Stimpson, D. V., & Maughan, M. R. (1978). Some correlates of trust. *Journal of Psychology, 99*(1), 103.

Fungáčová, Z., Hasan, I., & Weill, L. (2019). Trust in banks. *Journal of Economic Behavior & Organization, 157*, 452–476.

Gabarro, J. J. (1978). The development of trust, influence and expectations. *Interpersonal Behavior: Communication and Understanding in Relationships*, 290–303.

Ghosh, S. (2021). How important is trust in driving financial inclusion? *Journal of Behavioral and Experimental Finance, 30*, 100510. https://doi.org/10.1016/j.jbef.2021.100510

Giffin, K. (1967). The contribution of studies of source credibility to a theory of interpersonal trust in the communication process. *Psychological Bulletin, 68*(2), 104.

Gill, A., & Wilson, C. (2021). Bank connections and small business performance: Evidence from Canadian survey data. *International Journal of Finance & Economics, 26*(4), 5110–5134. https://doi.org/10.1002/ijfe.2057

Girón, A., Kazemikhasragh, A., Cicchiello, A. F., & Panetti, E. (2022). Financial inclusion measurement in the least developed countries in Asia and Africa. *Journal of the Knowledge Economy, 13*(2), 1198–1211. https://doi.org/10.1007/s13132-021-00773-2

Gokmenoglu, K. K., & Amir, A. (2021). The impact of perceived fairness and trustworthiness on customer trust within the banking sector. *Journal of Relationship Marketing, 20*(3), 241–260. https://doi.org/10.1080/15332667.2020.1802642

Good, D., & Gambetta, D. (1988). *Trust: Making and breaking cooperative relations*. New York: Basil Blackwell.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). New York: Psychology Press. https://doi.org/10.4324/9780203781098

Guiso, L., Sapienza, P., & Zingales, L. (2008). Trusting the stock market. *The Journal of Finance, 63*(6), 2557–2600. https://doi.org/10.1111/j.1540-6261.2008.01408.x

Gupta, M., Verma, S., & Pachare, S. (2021). An analysis of conventional and alternative financing: Customers' perspective. *International Journal of Finance & Economics*. https://doi.org/10.1002/ijfe.2541. ijfe.2541.

Hamakhan, Y. T. M. (2020). The effect of individual factors on user behaviour and the moderating role of trust: An empirical investigation of consumers' acceptance of electronic banking in the Kurdistan Region of Iraq. *Financial Innovation, 6*(1), 43. https://doi.org/10.1186/s40854-020-00206-0

Han, Y., Wang, H., & Wei, D. (2022). The Belt and Road Initiative, sister-city partnership and Chinese outward FDI. *Economic Research-Ekonomska Istraživanja, 35*(1), 3416–3436. https://doi.org/10.1080/1331677X.2021.1997618

Hart, K. M., Capps, H. R., Cangemi, J. P., & Caillouet, L. M. (1986). Exploring organizational trust and its multiple dimensions: A case study of general motors. *Organization Development Journal*.

Hildebrand, C., & Bergner, A. (2021). Conversational robo advisors as surrogates of trust: Onboarding experience, firm perception, and consumer financial decision making. *Journal of the Academy of Marketing Science, 49*(4), 659–676. https://doi.org/10.1007/s11747-020-00753-z

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion*.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Johnson-George, C., & Swap, W. C. (1982). Measurement of specific interpersonal trust: Construction and validation of a scale to assess trust in a specific other. *Journal of Personality and Social Psychology, 43*(6), 1306.

Jolliffe, I. T., & Cadima, J. (2016). Principal component analysis: A review and recent developments. *Philosophical Transactions of the Royal Society A: Mathematical, Physical & Engineering Sciences, 374*(2065), 20150202. https://doi.org/10.1098/rsta.2015.0202

Kee, H. W., & Knox, R. E. (1970). Conceptual and methodological considerations in the study of trust and suspicion. *Journal of Conflict Resolution, 14*(3), 357–366.

Khan, A., & Mubarik, M. S. (2022). Measuring the role of neurotransmitters in investment decision: A proposed constructs. *International Journal of Finance & Economics, 27*(1), 258–274. https://doi.org/10.1002/ijfe.2150

Knack, S., & Keefer, P. (1997). Does social capital have an economic payoff? A cross-country investigation. *Quarterly Journal of Economics, 112*(4), 1251–1288. https://doi.org/10.1162/003355300555475

Kusi, B., Agbloyor, E., Gyeke-Dako, A., & Asongu, S. (2020). Financial sector transparency, financial crises and market power: A cross-country evidence. *International Journal of Finance & Economics*. https://doi.org/10.1002/ijfe.2380. ijfe.2380.

Larzelere, R. E., & Huston, T. L. (1980). The dyadic trust scale: Toward understanding interpersonal trust in close relationships. *Journal of Marriage and Family*, 595–604.

Le, T.-H., Chuc, A. T., & Taghizadeh-Hesary, F. (2019). Financial inclusion and its impact on financial efficiency and sustainability: Empirical evidence from Asia. *Borsa Istanbul Review, 19*(4), 310–322. https://doi.org/10.1016/j.bir.2019.07.002

Lieberman, J. K. (1981). *The Litigious Society*.

Lins, K. V., Servaes, H., & Tamayo, A. (2017). The value of corporate social responsibility during the financial crisis: Social capital, trust, and firm performance. *The Journal of Finance, 72*(4), 1785–1824. https://doi.org/10.1111/jofi.12505

Long, J. (1983). *Confirmatory factor analysis*. Thousand Oaks: Sage. https://doi.org/10.4135/9781412983778

Low, M. P., Cham, T.-H., Chang, Y.-S., & Lim, X.-J. (2021). Advancing on weighted PLS-SEM in examining the trust-based recommendation system in pioneering product promotion effectiveness. *Quality and Quantity*, 1–30.

Lui, A., & Lamb, G. W. (2018). Artificial intelligence and augmented intelligence collaboration: Regaining trust and confidence in the financial sector. *Information and Communications Technology Law, 27*(3), 267–283. https://doi.org/10.1080/13600834.2018.1488659

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and retirement planning in the United States. *Journal of Pension Economics and Finance, 10*(4), 509–525.

Majeed, M. T. (2019). Social capital and economic performance of the Muslim world: Islamic perspectives and empirical evidence. *International Journal of Islamic and Middle Eastern Finance and Management, 12*(4), 601–622. https://doi.org/10.1108/IMEFM-02-2018-0057

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*(3), 709–734.

Mazurek, J., & Mielcová, E. (2017). *Is consumer confidence index a suitable predictor of future economic growth? An evidence from the USA*. Economics and Management.

McCole, P., Ramsey, E., Kincaid, A., Fang, Y., & Li, H. (2019). The role of structural assurance on previous satisfaction, trust and continuance intention: The case of online betting. *Information Technology & People, 32*(4), 781–801. https://doi.org/10.1108/ITP-08-2017-0274

McFall, L. (1987). Integrity. *Ethics, 98*(1), 5–20.

Meng, Y., Wang, X., Zhang, G., & Zheng, S. (2021). Trust and corporate R&D investment: Cross-country evidence. *Finance Research Letters, 40*, 101696. https://doi.org/10.1016/j.frl.2020.101696

Mishra, A. K. (1996). Organizational responses to crisis. *Trust in organizations: Frontiers of theory and research, 261*, 1996.

Mohy-Ul-Din, S., Samad, S., Rehman, M. A., Ali, M. Z., & Ahmad, U. (2019). The mediating effect of service provider expertise on the relationship between institutional trust, dispositional trust and trust in *takaful* services: An empirical investigation from Pakistan. *International Journal of Islamic and Middle Eastern Finance and Management, 12*(4), 509–522. https://doi.org/10.1108/IMEFM-02-2018-0072

Mubarik, M. S., Kusi-Sarpong, S., Govindan, K., Khan, S. A., & Oyedijo, A. (2021). Supply chain mapping: A proposed construct. *International Journal of Production Research, 61*(8), 1–17. https://doi.org/10.1080/00207543.2021.1944390

Mujtaba, M., Mubarik, M. S., & Soomro, K. A. (2022). Measuring talent management: A proposed construct. *Employee Relations: The International Journal*. https://doi.org/10.1108/ER-05-2021-0224

Naumann, E. (2018). Trust in ageing societies: Confidence in pensions across Europe. *Welfare State Reforms Seen from Below: Comparing Public Attitudes and Organized Interests in Britain and Germany*, 187–209 (<incomplete>).

Newell, W. J., Ellegaard, C., & Esbjerg, L. (2019). The effects of goodwill and competence trust on strategic information sharing in buyer–supplier relationships. *Journal of Business & Industrial Marketing, 34*(2), 389–400. https://doi.org/10.1108/JBIM-02-2017-0035

Osborne, J. W. (2014). *Best practices in exloratory factor analysis*. Louisville, KY: CreateSpace Independent Publishing Platform.

Pasiouras, F., Bouri, E., Roubaud, D., & Galariotis, E. (2021). Culture and multiple firm–bank relationships: A matter of secrecy and trust? *Journal of Business Ethics, 174*(1), 221–249. https://doi.org/10.1007/s10551-020-04571-9

Pavlou, P. A., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research, 15*(1), 37–59. https://doi.org/10.1287/isre.1040.0015

Pirson, M., & Malhotra, D. K. (2008). Unconventional insights for managing stakeholder trust. *Harvard Business School NOM Working Paper*, 08–057.

Ring, P. S., & Van de Ven, A. H. (1992). Structuring cooperative relationships between organizations. *Strategic Management Journal, 13*(7), 483–498.

Sarkar, S., Chauhan, S., & Khare, A. (2020). A meta-analysis of antecedents and consequences of trust in mobile commerce. *International Journal of Information Management, 50*, 286–301. https://doi.org/10.1016/j.ijinfomgt.2019.08.008

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An integrative model of organizational trust: Past, present, and future. *Academy of Management Review, 32*(2), 344–354. https://doi.org/10.5465/amr.2007.24348410

Sharma, U., & Changkakati, B. (2022). Dimensions of global financial inclusion and their impact on the achievement of the United Nations Development Goals. *Borsa Istanbul Review, 22*(6), 1238–1250. https://doi.org/10.1016/j.bir.2022.08.010

Shi, L., Ho, K.-C., & Liu, M.-Y. (2023). Does societal trust make managers more trustworthy? *International Review of Financial Analysis, 86*, 102537. https://doi.org/10.1016/j.irfa.2023.102537

Singh, S., & Bala Subrahmanya, M. H. (2020). The financial requirements of tech startups over its lifecycle in Bangalore: An analysis of why and how do they differ? *International Journal of Finance & Economics*. https://doi.org/10.1002/ijfe.2362

Sitkin, S. B., & Roth, N. L. (1993). Explaining the limited effectiveness of legalistic "remedies" for trust/distrust. *Organization Science, 4*(3), 367–392.

Solomon, L. (1960). The influence of some types of power relationships and game strategies upon the development of interpersonal trust. *Journal of Abnormal and Social Psychology, 61*(2), 223.

Stout, L. A. (2010). Trust behavior: The essential foundation of financial markets. *Behavioral Finance: Investors, Corporations, and Markets*, 511–522.

Svare, H., Gausdal, A. H., & Möllering, G. (2020). The function of ability, benevolence, and integrity-based trust in innovation networks. *Industry & Innovation, 27*(6), 585–604. https://doi.org/10.1080/13662716.2019.1632695

Tiniç, M., Tanyeri, B., & Bodur, M. (2021). Who to trust? Reactions to analyst recommendations of domestic versus foreign brokerage houses in a developing stock market. *Finance Research Letters, 43*, 101950.

Úbeda, F., Mendez, A., & Forcadell, F. J. (2023). The sustainable practices of multinational banks as drivers of financial inclusion in developing countries. *Finance Research Letters, 51*, 103278. https://doi.org/10.1016/j.frl.2022.103278

Utaka, A. (2003). Confidence and the real economy-the Japanese case. *Applied Economics, 35*(3), 337–342.

van Der Cruijsen, C., de Haan, J., & Roerink, R. (2021). Financial knowledge and trust in financial institutions. *Journal of Consumer Affairs, 55*(2), 680–714.

van der Cruijsen, C., de Haan, J., & Roerink, R. (2023). Trust in financial institutions: A survey. *Journal of Economic Surveys, 37*(4), 1214–1254.

van der Cruijsen, C., & Samarina, A. (2023). Drivers of trust in the ECB during the pandemic. *Applied Economics, 55*(13), 1454–1476. https://doi.org/10.1080/00036846.2022.2097192

van Raaij, W. F. (2016). Confidence and trust. In W. F. van Raaij (Ed.), *Understanding consumer financial behavior* (pp. 159–171). New York: Palgrave Macmillan US. https://doi.org/10.1057/9781137544254_12.

Wanke, P., Hassan, M. K., Azad, M. A. K., Rahman, M. A., & Akther, N. (2022). Application of a distributed verification in Islamic microfinance institutions: A sustainable model. *Financial Innovation, 8*(1), 80. https://doi.org/10.1186/s40854-022-00384-z

Wingreen, S. C., Mazey, N. C. H. L., Baglione, S. L., & Storholm, G. R. (2019). Transfer of electronic commerce trust between physical and virtual environments: Experimental effects of structural assurance and situational normality. *Electronic Commerce Research, 19*(2), 339–371. https://doi.org/10.1007/s10660-018-9305-z

Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist, 34*(6), 806–838.

Xu, X. (2020). Trust and financial inclusion: A cross-country study. *Finance Research Letters, 35*, 101310.

Zahid, R. M. A., Taran, A., Khan, M. K., & Chersan, I.-C. (2023). ESG, dividend payout policy and the moderating role of audit quality: Empirical evidence from Western Europe. *Borsa Istanbul Review, 23*(2), 350–367. https://doi.org/10.1016/j.bir.2022.10.012

Zhang, C.-B., & Li, Y.-N. (2019). How social media usage influences B2B customer loyalty: Roles of trust and purchase risk. *Journal of Business & Industrial Marketing, 34*(7), 1420–1433. https://doi.org/10.1108/JBIM-07-2018-0211

Zingales, L. (2011). The role of trust in the 2008 financial crisis. *The Review of Austrian Economics, 24*(3), 235–249.