Examining the factors affecting the decision processes on the accuracy of information of preservice teachers in social media

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Article Info	Abstract
Keywords: Accuracy of information Social media Heuristic-systematic information processing model Research Article	The purpose of this study was to examine information sharing on social media platforms (facebook, twitter, instagram, youtube, etc.) in terms of the accuracy of information. Within the scope of this study, the effect of systematic (argument quality, validity, aspect) and heuristic (expertise, popularity, trustworthiness) clues, which are thought to have an impact on the decision process of preservice teachers regarding the accuracy of information on social media platforms and the effect of the decision regarding the accuracy of the information on the attitude towards the information were investigated. The results of the study revealed that popularity and argument quality had significant influence on the decision-making and behavior development process of the students attending a teacher-training program, who were regarded as preservice teachers, by processing the information shared on social media. In addition, it was seen that there was a strong and positive relationship between the attitude towards the information shared on the social media and the perception of the accuracy of the information shared on the social media.

1. Introduction

The Internet, which has been an important touchstone for the spread of information since 1990, is now increasingly affecting the human life with the use of Web 2.0 tools. With the development of the technological infrastructure, individuals can now easily access the Internet. According to the Internet access data published by the Organization for Economic Cooperation and Development (OECD), the Internet access rate of family members in the European Union region was %90.3 in 2020 (OECD, 2020). Social media, which emerged with the developments in Internet technology, is one of the activities that Internet users benefit from most. Looking at the data on social media in the Digital 2021: Global Overview Report prepared by Kepios, it could be stated that the number of social media users increased by %9.9 in the last year and that %91 of Internet users were active social media users (Datareportal, 2021). Although social media initially emerged for the purpose of sharing information and creating a relationship network, it can increasingly perform many actions such as socializing, communicating, exchanging ideas, having fun, having emotional relationships, purchasing products, participating in solidarity campaigns (Kılıçer, Çoklar, & Ozeke, 2017). With social media, individuals establish more socially participatory and collaborative interactions and create environments where they can quickly disseminate information in real time and can talk about common issues (Bertot, Jaeger & Grimes, 2010). In terms of the dissemination process of scientific information, social media offer various opportunities such as co-authoring and planning

conferences and meetings (Rowlands, Nicholas, Russell, Canty & Watkinson, 2011). Similarly, there are studies showing that social media is used extensively by students from different grades (Mollaoğlu, Patientoğlu, Başer & Mollaoğlu, 2019; Yaylak & İnan, 2018) and teachers (Akkay & Kanadlı, 2019; Güntaş & Konuk, 2019). In addition, it is stated that the social media literacy levels of preservice teachers (Karasu & Arıkan, 2016) and the social media addictions of students from different grades (Gül & Diken, 2018; Deniz & Noislü, 2018) are at a moderate level. On the other hand, there are also research results showing that the social media awareness of higher education teachers is not at a sufficient (Kilis, Rapp & Gülbahar, 2014). It is pointed out in the literature that the intense use of social media brings about some problems. Many problems are discussed in the literature, ranging from psychological health problems such as addiction to cybercrime such as fraud. However, as we can see most clearly in the pandemic process we live in, one of the biggest problems discussed in social media is the accuracy of information. However, as we can see clearly in the pandemic process we live in, one of the biggest problems discussed in social media is the accuracy of information. Many concepts such as post-truth, in which reality can turn into different realities, especially through an infinite number of micro-level networks formed due to the nature of social media (Sismondo, 2017; Hannan, 2018; Sawyer, 2018; Lewandowsky, Ecker & Cook, 2017), infodemic, which makes it difficult for people to distinguish between true and false information with the quick spread of incorrect information over social media in the form of an epidemic. (Yılmaz, 2021; Aydın, 2020, Çalışkan & Duygun, 2021), or misinformation / fake news (Allcott, Gentzkow & Yu, 2019; Bode & Vraga, 2015) are directly related to the accuracy of the information shared in the social media. When considered in the context of computer ethics, accuracy is one of the four basic ethical issues of the information era Moor, 1985), and the accuracy of information in the information era is considered to be a serious issue that can directly affect people's lives (Mason, 1986). In particular, the decision processes regarding the accuracy of the information they encounter in social media are very important not only because their professional competences include guiding their students on information literacy but also because they use social media in the teaching process. Research on the reliability of the information shared on social media reveals that the content of the message or the various clues about the user sharing the message affect the reliability of the contents created by users (Lin, Spence & Lachlan, 2016). For this reason, it is thought that examining the relationship between the variables that affect the accuracy of the information in social media will contribute to the understanding of the decision process regarding the accuracy of the information of preservice teachers.

2. Theoretical Background

Social media environments, unlike traditional media, are environments where user-generated contents are directly confronted without any control. This situation makes it difficult for users to organize the information themselves, causing the formation of false information (Lin, Spence & Lachlan, 2016). Thus, users make many decisions in daily life based on the information shared in social media environments. For example, with the social media sharing of a famous economist, economic decisions are made, or decisions are made like participating in an aid campaign as a virtual activist. This is related to the evaluation of different aspects of the information in processing the information that shapes our behavior and helps us make decisions. There are various models that try to explain the persuasion and decision processes, especially by processing the messages presented to individuals in the communication process. These models, which are considered as information processing models in different fields such as communication, marketing, psychology, and education, generally try to explain the cognitive processes that take place until the persuasion and decision stage by processing the messages presented to individuals. Among these models, one of the models suggesting that the information is processed in two different ways in the response of individuals to the information is the "Heuristic-Systematic Information Processing Model (HSM)" put forward by Shelly Chaiken, which is based on the dual-process theory (Chaiken, 1980). HSM assumes that individuals use one or both of the heuristic and systematic modes of information processing when trying to evaluate the information to make a judgment (Trumbo, 1999). Systematic information processing is defined

as the painstaking examination and comparison of information, while heuristic information processing is the use of heuristic clues to make a judgment more easily. In other words, while evaluating the content of a message according to the model, in heuristic information processing, individuals spend a great effort to understand the arguments related to the message and to evaluate the validity of the message. On the other hand, in heuristic information processing, the individual makes relatively little effort to judge the validity of the message. For this, instead of evaluating the content of the message, individuals accept the result of the message by relying on the identity of the source or other non-content clues to make a decision (Chaiken, 1980). Non-content clues are judgments learned by individuals through their past experiences, which will require less cognitive effort (Wright & Scholl, 1999). The individual makes use of cognitive processes such as deep thinking and intense reasoning by focusing attention on understanding in systematic information processing. For instance, in an economic policy proposed, the individual carefully considers the arguments presented, the person debating, and the reasons for the person's behavior and combines this information to use it to guide his/her next attitudes and behavior. S/he reads as many magazine and newspaper reports as possible to make the best decision However, it is difficult to do systematic information processing unless a person gets motivated or makes an effort to process the information systematically. In heuristic information processing, the individual focuses on easily recognizable and understandable clues such as the expertise of the presenter, group membership, number of the arguments presented, and reactions to the presented argument, without putting too much effort into the information. In this way, the individual can make quick and efficient judgments with little critical thinking (Chaiken & Ledgerwood, 2012). For example, in a proposed economic policy, an individual adopts the opinion of a well-known economist. In addition, according to the model, individuals tend to use heuristic information processing instead of systematic information processing to save time and effort cognitively (Wright & Scholl, 1999). However, the increased level of systematic information processing or the desire to achieve more reliable results reduces or weakens the effects of heuristic information processing on one's judgment of the message (Chaiken, 1980; Chaiken, Liberman & Eagly, 1989). When the individual has the desire to reach reliable results, s/he turns to systematic information processing rather than heuristic information processing (Zuckerman & Chaiken, 1998).

When studies related to the model are examined, it is seen that the model is used in examining the decision processes of individuals in different fields. Wright & Scholl (1999) examined the effect of teachers' immediacy on students' learning and behavior on the basis of HSM. The study investigated the influence of teachers on the teaching process who exhibited nonverbal behaviors related to immediacy such as eye contact, interaction, tone of voice, body language, physical distance and feedback at different levels. As a result of the research, it was found that the teachers who showed immediacy had an effect on the recall of the message, the value of the message and training and the amount of effort spent on the message. In a similar study conducted in the context of the HSM model, Edwards & Edwards (2013) reported that the students who had common positive views about teachers in online environments evaluated them heuristically and perceived them to be more competent and attractive, whereas the students who had common negative views about teachers systematically evaluated them. Xiao, Wang & Chan-Olmsted (2018) examined how Youtube influencers affect the reliability of the information in the video they shared within the framework of HSM. As a result of their research, it was revealed that the trust, social advocacy, argument quality and involvement regarding the information in the video shared by Youtube phenomena influence the information credibility perceived by social media users. In another study conducted in the field of medicine, Trumbo (1999) investigated the theoretically proposed structure of HSM in the context of evaluation of the risk judgment for cancer. The results demonstrated that motivation, self-efficacy and knowledge adequacy were important predictors for the evaluation of risk judgment in groups with different levels of cancer-related anxiety. Du, Ke, He, Chu & Wagner (2019) examined how peer-to-peer lending firms make use of social media popularity to increase / enhance customer acquisitions in the context of the HSM model. The researchers found that the social media popularity of the peer-to-peer lending firms positively affected the customer acquisitions and that the source credibility, content freshness and

transaction relevance had influence on the social media popularity of the firms. For this reason, it is thought that it is important to examine which heuristic and systematic variables are effective in individuals' decisions regarding the accuracy of information in social media in the process of information processing.

3. Methodology

This study, which examined the effects of the factors related to the source and content of the information shared in the social media on the belief in the accuracy of the information and on the attitude towards the information in the social media, was designed using the causal survey method. Causal survey studies are those which try to determine the independent variable(s) influential on one or more dependent variables are tried to be determined (Gürbüz & Şahin, 2016) and which allow estimating the possible causes of the observed variables (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2018). For this, the theoretical model created on the basis of the heuristic and systematic information processing model (HSM) and the direct and indirect effects between the variables within the context of the model were tested using the Structural Equation Modeling (SEM) analysis (Çokluk, Şekerci & Büyüköztürk, 2010). In the process of structural equation modeling analysis, the steps mentioned by Tabachnick & Fidell (2013) were followed, and the analyses were carried out using IBM SPSS Statistics 22 and AMOS 24.

3.1. Research Model

The study tried to determine the heuristic and systematic clues used in the information processing process for the sharing on social media platforms (Facebook, Twitter, Instagram, Pinterest, Youtube etc.). For this, the effects of heuristic clues (expertise, popularity, trustworthiness) regarding the source presenting the information in social media and the effects of the systematic clues regarding the information content (argument quality, validity, aspect) on the accuracy of information in social media as well as on the attitudes towards the information in social media were examined. In other words, the study tried to reveal the heuristic and systematic clues influential on the decision regarding the accuracy of the information perceived by the social media users in the process of information processing. Accordingly, the structural model created and tested in the study is presented in Fig. 1. Each predictor variable and the hypotheses put forward in relation to these variables are explained in subtitles.
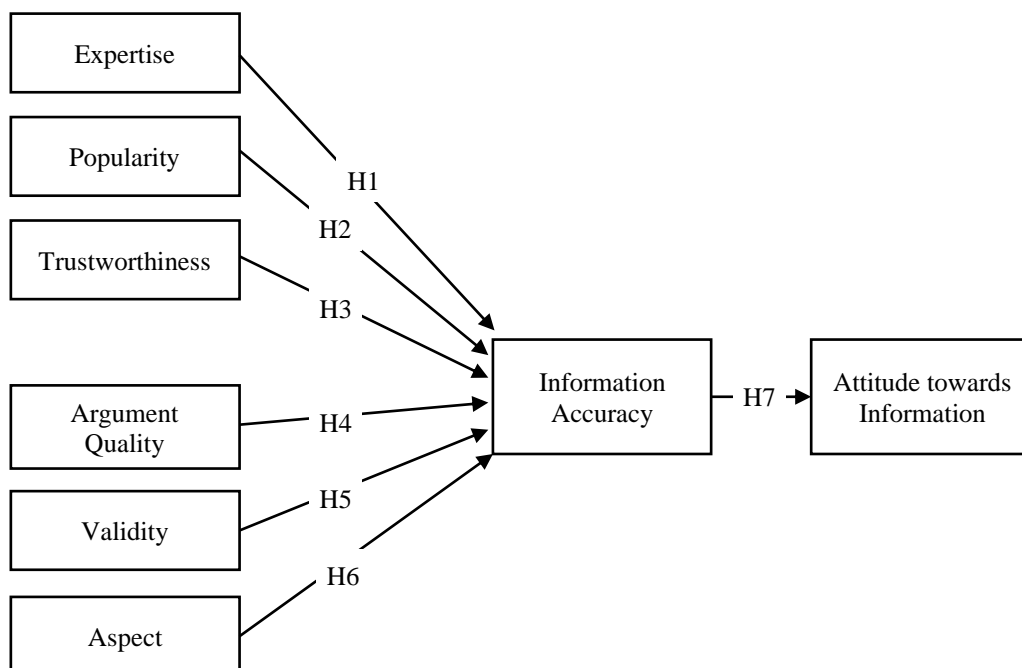

Fig. 1. Structural Model and Hypothesis.

Expertise

According to the HSM model, the individual uses the heuristic information processing to make little effort on the content in reaching a judgment about the message s/he encounters. In the heuristic information processing process, the individual makes a decision about the message by using various clues about the source of the message rather than the content of the message (Chaiken, 1980; Chaiken & Ledgerwood, 2012). One of these clues, expertise, is the degree to which the source sharing the message is perceived as a source that knows the truth. Being knowledgeable and experienced and having a reliable reputation in the field related to the message contribute to the formation of the perceived expertise of the message source (Xiao, Wang & Chan-Olmsted, 2018). It is stated that the authority and identity characteristics of the person sharing the message especially on social media platforms affect the reliability perceptions (Lin, Spence & Lachlan, 2016). In this respect, the following hypothesis was established in the study in order to measure the effect of the expertise of the person sharing information on social media platforms on the accuracy of the information.

H1: The expertise of the person sharing information on social media has a positive effect on the decision regarding the accuracy of the information.

Popularity

Another resource used in the decision process for the message in the heuristic information processing is popularity (Chaiken & Ledgerwood, 2012). Popularity refers to the degree of perceived popularity of the message source, such as the group which the person presenting the information belongs to and the reactions to the presented argument (number of likes and so on). Popularity on social media platforms includes elements such as number of followers, user's age, number of retweets of the message by the follower (Tavazoee, Conversano & Mola, 2020). On social media platforms where content creation is uncontrolled, the reliability of the source that shares from the eyes of the users affects the popularity of that source (Gonçalves, Almeida, dos Santos, Laender & Almeida, 2010). In this respect, the following hypothesis was put forward in the study in order to measure the effect of the popularity of the person who shares information on social media platforms on the accuracy of the information.

H2: The popularity of the person sharing information on social media has a positive effect on the accuracy of the information.

Trustworthiness

Similar to expertise, trustworthiness is one of the clues about the resource used in the process of systematic information processing (Chaiken & Ledgerwood, 2012). Trustworthiness, which is also considered in the context of cyber human value (Kılıçer, Çoklar & Özeke, 2017), is the state of being truthful and honest that expresses trust in the source. In addition to appearing knowledgeable, it is also important for the information source to be considered reliable (Xiao, Wang & Chan-Olmsted, 2018). Especially in the context of computer ethics, individuals attach more importance to the trust and trustworthiness of the information source due to the invisibility factor (Moor, 1985), which is the most important feature of the digital world. In the communication process, the trust in the source is important in accepting the message of the source (Gedik & Şendağ, 2019). For example, research shows that cheating has a negative effect in the use of Facebook (Clayton, Nagurney & Smith, 2013). In this respect, the following hypothesis was put forward in the study in order to measure the effect of the trustworthiness of the person sharing information on social media platforms regarding the accuracy of the information.

H3: The trustworthiness of the person sharing information on social media has a positive effect on the accuracy of the information.

Argument Quality

According to the HSM model, the individual intensively evaluates the content of the message shared in the process of systematic information processing in order to reach a judgment about the message s/he encounters (Chaiken, 1980; Chaiken & Ledgerwood, 2012). According to Bhattacherjee and Sanford (2006), argument quality is defined as the persuasive power of the arguments found in the message in which information is shared. On digital platforms, argument quality is related to how the messages sent online (posts, comments, videos, audios, and so on) are perceived and evaluated by the followers (Erdoğan & Mucan Özcan, 2020). The quality of the arguments in the shared message is influential on the decision process regarding the message. Studies revealed that the argument power of the message is one of the factors that affect the reliability of information on social media platforms or online platforms (Li & Suh, 2015; Zhang, Zhao, Cheung & Lee, 2014). In this respect, the following hypothesis was put forward in the study in order to measure the effect of the argument quality of the information sharing on social media platforms on the accuracy of the information.

H4: The argument quality of the information shared on the social media has a positive effect on the accuracy of the information.

Validity

Validity, which directly refers to the assessment regarding the message, is another clue used to reach a judgment about the message in the process of systematic information processing. Validity is defined as the logical confirmability of a judgment (TDK, 2021). Accordingly, emotions are more effective than objective facts in shaping the views and judgments of the society. For this reason, the fact that the evidence presented in relation to the information provides a scientific justification; that the judgments have passed through scientifically valid processes; that the sources presented are verifiable; and that it is possible to reach the same information via different sources is all related to the validity proofs regarding the information (Gedik & Şendağ, 2019). In this respect, the following hypothesis was put forward in the study in order to measure the effect of the validity of the evidence in the information sharing on social media platforms on the accuracy of the information.

H5: The validity of the information shared on the social media has a positive effect on the decision regarding the accuracy of the information.

Aspect

Social media is seen as effective platforms where users can spread their ideas easily and efficiently. However, these ideas can sometimes be hateful and harmful (Alkiviadou, 2019). In addition, the use of appropriate expressions in terms of language and content while writing messages on the Internet is among the topics recommended for communication on the Internet (Odabaşı, Kabakçı & Çoklar, 2007). This situation may cause misinterpretation of the information intended to be conveyed in the message or may lead to failure in the evaluation of the message. In addition, the old words used in the message or the use of different characters, font sizes or colors may have a negative effect on the understanding of the message. Therefore, the following hypothesis was put forward in the study in order to measure the effect of the message language (the aspect of the information) in the information-content sharing on social media platforms on the accuracy of the information.

H6: The language of the message (the aspect of the information) in the sharing in social media has a positive effect on the accuracy of the information.

Information Accuracy and Attitude towards Information

One of the most important issues in the digital world, which will affect people's lives in the information age and where control is eliminated due to direct information production, is the accuracy of information (Mason, 1986). Accuracy, which is related to being trustworthy and genuine, seems to be among one of the main values addressed by many researchers within the scope of values (Talvar, 2009). In the information society that emerged with the development of information technologies, accuracy has been replaced by various values seen in industrial society such as respect for the authority, professional ethics and teamwork (Vessels & Huitt, 2018). When accuracy is considered in the context of digital technologies, it is related to the problems that the information produced through digital technologies may cause (Mason, 1986). The digital world also includes being the same person in real life, being completely honest with oneself and others, not lying and being consistent (Kılıçer, Çoklar & Özeke, 2017). In today's information age, information brings about power, and the power provided by information thus primarily leads to ethical problems like distortion, abuse and so on (Gedik & Şendağ, 2019). Especially today, issues like misinformation, fake news, infodemic, post-truth, which are all discussed in connection with social media platforms, are related to the deliberate or unintentional dissemination of information (Allcott, Gentzkow & Yu, 2019; Bode & Vraga, 2015; Sismondo, 2017; Hannan, 2018; Sawyer, 2018; Lewandowsky, Ecker & Cook, 2017; Yılmaz, 2021; Aydın, 2020, Çalışkan & Duygun, 2021). Therefore, in today's digital world, where we encounter a lot of information, acting according to the information creates critical results in individual and social respects because it is easy to reach information in the world of informatics, yet it is not so easy to reach the right information or to be sure of the accuracy of the information (Gedik & Şendağ, 2019). On the other hand, attitude is defined by Ajzen & Fishbein (1977) as an individual's evaluation of another person, physical object, a behavior or a policy, and it is stated that attitudes have a direct effect on shaping the behavior. In another saying, attitude is a person's permanent emotional tendency towards an object (Kwok & Gao, 2005). Attitude towards information is the evaluation resulting from external factors such as the individual's beliefs and decisions regarding certain results caused by the information s/he has acquired. Therefore, individuals' attitudes towards information are closely related to their beliefs and decisions regarding the information. For this reason, in the study, the following hypothesis was put forward in order to measure the effect of the perceptions of the accuracy of the information in the information sharing on social media platforms on the attitude towards information.

H7: The decision regarding the accuracy of information in social media has a positive effect on the attitude towards the information.

3.2. Data Collecting Tools

In the study, the items related to each variable were developed by the researcher in order to determine the heuristic and systematic clues that the university students used in their decision processes regarding the accuracy of information in their social media sharing. During the process of item development, first of all, the items used in the literature for the measurement of the related variable (e.g. Xiao, Wang & Chan-Olmsted, 2018; Kwok & Gao, 2005; McCroskey & Teven, 1999) were examined, and draft items were created. Next, the draft items developed to measure each variable were submitted for content and face validity to the opinion of two experts from the field of educational sciences and to the opinion of one expert from the field of marketing. The statements in the items were finalized by taking into account the corrections suggested by the experts. In the data collection tool, there were a total of 31 statements in 5-point Likert type, apart from demographic information. Accordingly, five items in the variable of trustworthiness; four items in each of the variables of expertise, argument quality, and validity, three items

in each of the variables of popularity and aspect were rated as "1=completely unimportant" and "5=quite important". There were 4 items in each of the variables of information accuracy and attitude towards information, and the items were evaluated as "1=strongly disagree" and "5=strongly agree".

Exploratory Factor Analysis and Confirmatory Factor Analysis were performed to determine the construct validity of the data collection tool. Before the exploratory factor analysis, the suitability of the data set for factor analysis was evaluated by examining the Kaiser-Mayer Olkin (KMO) value and Bartlett's Sphericity test. As a result of the analysis, as seen in Table 1, the KMO value was between 0.573 and 0.862 for all the variables tested in the model, and Bartlett's Sphericity test was found significant. According to these results, it was revealed that the sample adequacy was normal; that the sample size was good for factor analysis; and that the correlation matrix was appropriate (Büyüköztürk, 2002; Field, 2005; Tabachnick and Fidell, 2013).

Table 1.

Results of KMO and Bartlett's Sphericity Test.

Structures	KMO	Bartlett's Test of Sphericity		
		Chi-Square	df	p
Expertise (EX)	0.765	626.196	6	.000**
Popularity (PO)	0.730	532.310	3	.000**
Trustworthiness (TR)	0.862	974.500	10	.000**
Argument quality (AQ)	0.573	273.871	6	.000**
Validity (VA)	0.742	303.980	6	.000**
Aspect (AS)	0.649	178.406	3	.000**
Information accuracy (IA)	0.693	431.893	6	.000**
Attitude towards information (ATI)	0.660	677.589	6	.000**

*p<.05, **p<.001

When the factor solution and scree plot graphics obtained as a result of the exploratory factor analysis were examined, it was seen that all the variables exhibited a uni-dimensional structure. According to Table 2, it was seen that item factor loads of all the variables were between .622 and .915; that the composite reliability (CR) values were between .799 and .925, and that the average variance extracted (AVE) values were between 502 and .804. As a result of the analysis, it was found that the factor load values, CR and AVE values, which are a coefficient explaining the relationship of the items with the factors, were above the limit values recommended in the literature (Büyüköztürk, 2002; Field, 2005; Hair, Black, Babin, Anderson, and Tatham, 2006). In addition, when the Cronbach's Alpha values calculated for reliability were examined, it was seen that the internal consistency coefficient Cronbach's Alpha values ranged between .651 and .887.

Table 2.

Factor Loads, Explained Total Variance, CR, AVE, and Cronbach's Alpha Values.

Structures	λ	CR	AVE	Explained Total variance	α
Expertise (EX)					
The person's expertise in the subject area who did sharing	.844				
The person's level of knowledge about the subject who did sharing	.885	.901	.695	.70	.847
Competence of the person who did sharing	.845				
Experience of the person in the subject area who did sharing	.754				
Popularity (PO)					
Number of followers/subscribers of the person who did sharing	.915				
The person's level of being famous/ who did sharing	.908	.925	.804	.80	.878
Number of likes of the person who did sharing	.867				
Trustworthiness (TR)					

Structures	λ	CR	AVE	Explained Total variance	α
Trustworthiness of the person who did sharing	.812				
Honesty of the person who did sharing	.894				
Credibility of the person who did sharing	.902	.920	.699	.70	.887
Sincerity of the person who did sharing	.761				
Consistency of the person who did sharing	.803				
Argument quality (AQ)					
Credibility of the sharing	.761				
Persuasiveness of the sharing	.797	.799	.502	.50	.651
Supporting the sharing with scientific evidence	.622				
The sharing not containing comments without scientific evidence	.637				
Validity (VA)					
Supporting the information in the sharing with various evidences	.705				
Accessibility to the evidence presented in the sharing	.844	.842	.573	.57	.740
Reliability of the sources presented in the sharing	.743				
Verification of the sharing made in various ways (teyit.org etc.)	.728				
Aspect (AS)					
The sharing not containing profanity/slang.	.766				
Understanding the statements in the sharing	.840	.833	.624	.62	.675
Compliance of the sharing with Turkish spelling rules	.762				
Information Accuracy (IA)					
The sharings on social media give credible information.	.686				
The sharings on social media give factual information.	.876	.856	.601	.60	.772
The sharings on social media give accurate information.	.847				
The sharings on social media give persuasive information.	.669				
Attitude towards information (ATI)					
I believe in the information shared on social media	.804				
I rely on the information shared on social media	.852	.887	.662	.66	.823
I make decisions according to the information shared on social media	.803				
The information shared on social media directs my behaviors	.794				

According to the results of the confirmatory factor analysis performed, the item factor loads of all the variables in the measurement tool were between .310 and .921 and the error variances between .087 and .848. As a result of the analysis, it was seen that the factor load values were above the limit values recommended in the literature (Büyüköztürk, 2002; Field, 2005; Hair, Black, Babin, Anderson and Tatham, 2006) and each item contributed significantly to the latent variable. In addition, considering the alternative fit indices evaluated for the model fit and most commonly used in the literature (Table 3), the majority of the goodness of fit values of the variables considered are in the range expressed as good (acceptable) fit (Kline, 2005; Hu & Bentler, 1999; Tabachnick & Fidel, 2013; Jöreskog & Sörbom, 1988; Marsh, Balla & McDonald, 1988). Moreover, in the present study, it was revealed that the variables of Popularity (PO) and Aspect (AS) showed just-identified model properties. In the just-identified model, the number of data variances and covariances of the variables is equal to the number of parameters to be estimated; a single solution is obtained for all the parameters; and in this case, the degree of freedom is calculated as zero (Byrne, 2010). For this reason, instead of interpreting the model fit indices for the related variables, item factor loads and error variances were examined. It was seen that the item factor loads of the related variables were between .583 and .890 and the error variances between .340 and .792. Accordingly, the theoretical model of the variables tested with confirmatory factor analysis was accepted as appropriate.

Table 3.

Goodness of Fit Indices of Confirmatory Factor Analysis.

Structures	χ^2	df	p	χ^2/df	RMSEA	RMR	GFI	AGFI	CFI	IFI
EX	0.772	1	0.380	0.772	0.000	0.002	0.99	0.98	1.00	1.00
PO*	0.000	0				0.000	1.00		1.00	1.00
TR	10.739	4	0.030	2.685	0.072	0.006	0.98	0.95	0.99	0.99
AQ	5.678	1	0.017	5.678	0.119	0.010	0.99	0.91	0.98	0.98
VA	3.222	2	0.200	1.611	0.043	0.007	0.99	0.97	0.99	0.99
AS*	0.000	0				0.000	1.00		1.00	1.00
IA	2.703	1	0.100	2.703	0.072	0.010	0.99	0.95	0.99	0.99
ATI	0.026	1	0.871	0.026	0.000	0.001	1.00	1.00	1.00	1.00

* The model for the relevant variables is a just-identified.

Also construct validity was examined with discriminant validity. Table 4 demonstrates correlation coefficients and the values of the square root of AVE. As it was seen in Table 4, the square roots of AVE for all the constructs were greater than the correlation coefficients, satisfying the discriminant validity.

Table 4.

Discriminant Validity of the Constructs.

Construct	EX	PO	TR	AQ	VA	AS	IA	ATI
EX	.834*							
PO	.051	.897*						
TR	.414	.004	.836*					
AQ	.383	.159	.402	.709*				
VA	.324	-.002	.312	.481	.757*			
AS	.201	-.013	.293	.388	.353	.790*		
IA	-.068	.165	.031	.020	-.084	-.041	.775*	
ATI	-.126	.215	-.045	-.035	-.123	-.088	.501	.814*

* The diagonal values of the correlation matrix are the square roots of AVE.

3.3. Study Group

The participants of the study were 330 university students studying in various teacher-training programs of a state university in Turkey in the 2021-2022 academic year. Demographic information about the participants is presented in Table 5. The reason for choosing the students studying in the teacher-training program as the participants of the study was that these students were preservice teachers and that their professional competencies included guiding students on information literacy. Among the "General Competencies for the Teaching Profession" published by the Ministry of National Education in Turkey, teachers have the competencies both in using information and communication technologies effectively in the teaching and learning process (B3.9) and in guiding their students in terms of their personal development and planning their future (C2.3). In addition, these students, who are regarded as preservice teachers, have a role to prepare their students for the future by directing them to the right information when they start their teaching profession. The convenience sampling method was preferred for the selection of the participants. For this, after the third and fourth grade students studying in the related teacher-training program were informed about the research, those who voluntarily participated in the study were recruited as participants.

Although data were collected from 431 university students within the scope of the study, a total of 101 participants were excluded from the study and from the analysis as a result of the pre-analysis because not all the data collection tools were responded to (10 people) as well as because they were outliers (91 people) by staying outside the range of +3 to -3 in terms of the z scores.

Table 5.

Demographic Information about the Participants.

		Frequency	Percentage
Gender	Female	277	%83.9
	Male	53	%16.1
Grade	3rd Grade	85	%25.8
	4th Grade	245	%74.2
Purpose of social media use (the first three)*	Entertainment	91	%27.6
	Getting information (learning, research, etc.)	87	%26.4
	Keeping up with current developments	63	%19.1
Social media application used most	Instagram	291	%88.2
	Youtube	266	%80.6
	Twitter	152	%46.1
	Pinterest	56	%17.0
	WhatsApp	24	%7.3
	Facebook	17	%5.2
	TikTok	17	%5.2
	Other (Discord, Twitch, Telegram, LinkedIn, Tumblr)	5	%1.5
Beliefs regarding social media sharing*	I don't believe any of the information shared	6	%1.8
	I am skeptical of the information shared	131	%39.7
	I believe the shared information after verifying it	190	%57.6
	I believe all the information shared	0	%0

* Has a missing value

As can be seen in Table 5, the majority of the university students (%83.9, n=277) participating in the research were female. In addition, the majority of the participants (%74.2, n=245) were senior students. The participants used social media mostly for entertainment (%27.6, n=91), getting information (%26.4, n=87) and following current developments (%19.1, n=63), respectively. social media applications used most frequently were Instagram (%88.2, n=291) and Youtube (%80.6, n=266). Moreover, the number of social media applications most used by the participants varied between 1 and 7 (Mean=2.5, SD=0.99). Finally, when the beliefs of the participants regarding the information shared on the social media were considered, it was seen that almost all of them (%97.3, n=321) said they did not directly believe the information shared on the social media without first confirming it.

3.4. Data Collection and Analysis

The questionnaire technique was used to collect data in line with the research purposes. The data were collected face-to-face from university students from seven different teacher-training programs (Guidance and Psychological Counseling, Turkish Language Teaching, Mathematics Teaching, Preschool Teaching, Social Studies Teaching, Elementary School Teaching and Science Teaching) in the Education Faculty of Tokat Gaziosmanpaşa University in the fall semester of the academic year of 2021-2022. In line with the ethics committee permission, the data collection tool prepared during the data collection process was applied to the students who wanted to participate voluntarily in the study. The data collection process was completed in 10 days in November 2021. At the end of the data collection process, the data were collected from 431 university students.

During the analysis of the data, first of all, the data obtained were checked for data incompatibility or inconsistency. As a result of this check, 10 participants who did not respond to the whole data collection tool were excluded from the data analysis. In addition, all the variables to be tested in the structural model were examined in terms of z scores, and 91 participants who were outliers outside the range of +3 and -3

were excluded from the scope of the study and were not included in the analysis. The analyses were performed on the data collected from 330 participants. Sample size, normality and multicollinearity were also examined in the preliminary analysis phase of the structural equations modeling. It was seen that the sample size (n=330) for the structural equations modeling analysis was sufficient as it was more than 5 times the number of observed variables in the literature (Kline, 2005). Next, the values of kurtosis and skewness were checked for the normality of the data set. The kurtosis value of the data set varied between -0.869 and 1.136 and was within the range of ±10, which is the limit values stated in the literature (Kline, 2005). The skewness value varied between -0.730 and 0.228 and was within the range of ±3, which is the limit value stated in the literature (Kline, 2005). Accordingly, the data set was found to ensure the assumption of normality. Lastly, variable inflation factor (VIF) values were examined to see if the data met the multicollinearity assumption. The VIF values for all the variables varied between 1.042 and 1.618 and were below the acceptable values of 3, which is stated in the literature (O'Brien, 2007). When all the findings were evaluated, it was seen that the data set was suitable for structural equations modeling analysis. Next, the model created was tested in the IBM SPSS AMOS v24 program. The maximum likelihood method was used to test the relationships between the variables. While evaluating the model fit, χ^2/df, GFI, AGFI, RMSEA, SRMR, CFI and IFI, which are the most commonly used parameters and indices in the literature (Kline, 2005; Tabachnick & Fidell, 2013) were preferred.

4. Findings

In line with the structural equations modeling analysis carried out to test the hypotheses about the relationships in the structural model formed based on the heuristic and systematic information processing model (HSM) regarding the accuracy of the information in social media and the attitude towards the information, the values related to the measurement model fit are given in Table 6.

Table 6.

Model Fit Indices for the Structural Model.

Fit Indices	Values	Recommended values	Reference
χ^2	871.521		
Df	419		
P	0.000		
χ^2/df	2.080	≤ 3 (Perfect fit)	Kline, 2005
RMSEA	0.057	≤ 0.06 (Good fit)	Hu & Bentler, 1999
RMR	0.056	≤ 0.08 (Good fit)	Tabachnick & Fidell, 2013
GFI	0.85	≥ 0.85 (Acceptable fit)	Jöreskog & Sörbom, 1988
AGFI	0.83	≥ 0.80 (Acceptable fit)	Marsh, Balla, & McDonald, 1988
CFI	0.90	≥ 0.90 (Good fit)	Tabachnick & Fidell, 2013
IFI	0.90	≥ 0.90 (Good fit)	Tabachnick & Fidell, 2013

As can be seen in Table 6, the indices f χ^2/df=2.080, RMSEA=0.057, RMR=0.056, GFI=0.85, AGFI=0.83, CFI=0.90 were IFI=0.90 were found to be acceptable according to the model fit indices calculated for the tested measurement model. Accordingly, it could be stated that the measurement model fit well with the collected data and that the measurement model was confirmed. After the validation of the measurement model, the structural model was tested. As a result, the path coefficients between the latent variables are given in Fig. 2., and the parameter values are presented in Table 7.

Table 7.

Results related to the Structural Model.

Paths	Standardized Coefficients (β)	Critical Ratio (C.R.)	p	Hypotheses	Hypothesis results
EX → IA	-.133	-1.919	.055	H1	Not supported
PO → IA	.129	2.077	.038*	H2	Supported
TR → IA	-.059	-.736	.462	H3	Not supported
AQ → IA	.211	2.170	.030*	H4	Supported
VA → IA	-.149	-1.730	.084	H5	Not supported
AS → IA	.023	.296	.767	H6	Not supported
IA → ATI	.526	6.761	.000**	H7	Supported

*p<.05, **p<.001

As seen in Table 7, the path coefficient value of the variables of the argument quality (AQ) (β=0.21; p<.05) and popularity (PO) (β=0.13; p<.05) on information accuracy (IA) were significant. The path coefficient value of the variable of information accuracy (IA) on attitude towards information (ATI) (β=0.53; p<.001) was significant. The other variables, expertise (EX) (β=-0.13; p>.05), trustworthiness (TR) (β=-0.06; p>.05), validity (VA) (β=-0.15; p>.05) and aspect (AS) (β=0.02; p>.05) on information accuracy (IA) were not significant. According to these results, the hypotheses of H2, H4 and H7 were supported, the H1, H3, H5 and H6 hypotheses were not.

*p<.05, **p<.001
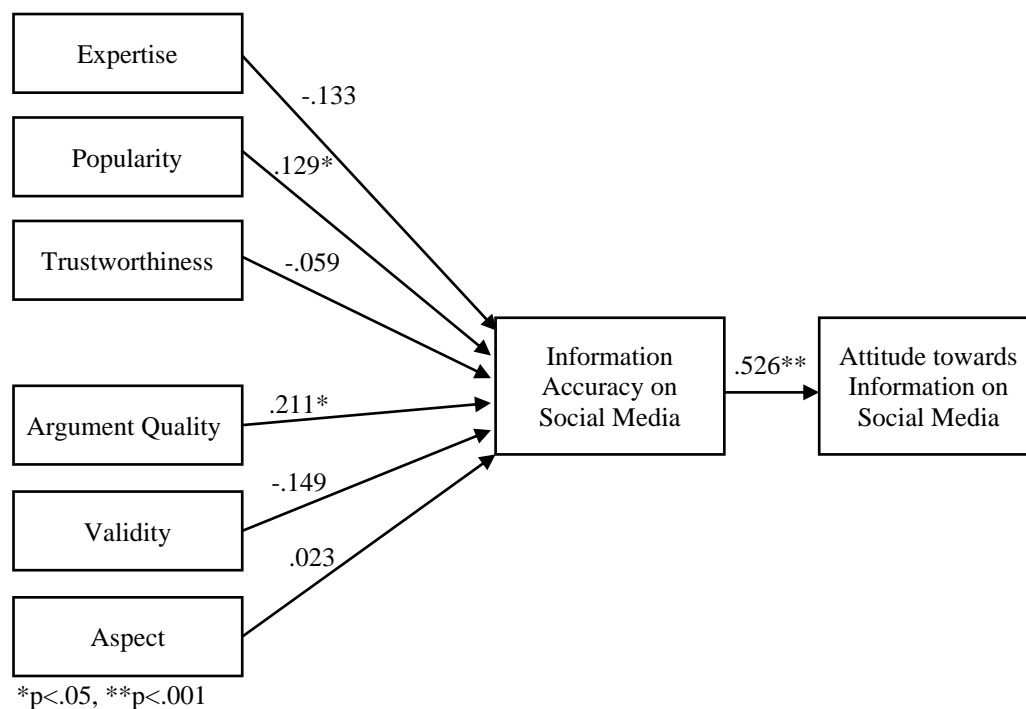
Fig. 2. Structural Model and Path Coefficients.

According to the results of the structural equations modeling analysis, the popularity of the person sharing information on social media and the argument quality of the shared information had a positive and significant effect on the decision process for the accuracy of the information. The decision on the accuracy of the information in the social media had a positive and significant effect on the attitude towards the information. This situation revealed that in the context of the heuristic and systematic information processing model, only popularity among the heuristic clues and only argument quality among the systematic clues had a significant effect on the decision process regarding the accuracy of the information in social media. Consequently, it was seen that the quality of the content shared in the social media was

more effective than the popularity of the sender in the decision process regarding the accuracy of the information and that the belief in the accuracy of the information had a significant effect on the attitude towards the information in the social media. In other words, it could be stated that systematic clues are more effective than heuristic clues in the decision process regarding the accuracy of information in social media.

5. Discussion and Conclusion

As a result of the research, it was found similar to the literature that processes of both systematic and heuristic information processing have an effect on the decision process regarding the accuracy of the information shared in the social media, which is examined within the framework of the HSM model (Chaiken, 1980; Chaiken, Liberman & Eagly, 1989; Chaiken & Ledgerwood, 2012). Argument quality among the clues related to the process of systematic information processing and popularity among the clues related to the process of heuristic information processing have a positive and significant effect on the information accuracy. On the other hand, it was seen that the validity of the information, which is considered as systematic clues, the aspect that can affect the intelligibility of the information, and expertise of the sender, which is considered as heuristic clues, and the trustworthiness of the sender do not have a significant effect on the accuracy of the information. The accuracy of information has a strong positive effect on attitude towards information. Accordingly, it could be stated that in their decision processes regarding the accuracy of the information shared on social media as well as in their attitudes towards information, preservice teachers, who will prepare their students for the future by directing them to the accurate information, focus on the popularity of the person sharing the information and on the quality of the information.

The research findings revealed that argument quality (AQ) was the most dominant predictor in the decision process regarding the accuracy of information in social media. Accordingly, it is seen that when deciding on the accuracy of information sharing on social media platforms, preservice teachers mostly consider arguments such as the credibility of the information shared, its persuasiveness, the supported with scientific evidence, and the absence of non-scientific comments. Considering that it is easy to reach information yet difficult to reach the accurate information in social media platforms (Gedik & Şendağ, 2019), this result is compatible with the fact that as stated in the HSM model, the individual prefers the process of systematic information processing due to his/her desire to reach more reliable results (Chaiken, 1980; Chaiken, Liberman & Eagly, 1989). In addition, this finding is consistent with another result obtained in the study that the preservice teachers were suspicious of the information shared on social media and that they believed it after confirming it (Table 5). In studies conducted in different fields based on the HSM model in the literature, it was reported that argument quality was an important predictor of information credibility (Xiao, Wang & Chan-Olmsted, 2018; Zhang, Zhao, Cheung & Lee, 2014). Xiao, Wang & Chan-Olmsted (2018), In one study, which examined how Youtube influencer affect the reliability of the information in the video they shared, within the framework of HSM, it was found that the argument quality in the video shared by the influencer was the most dominant variable on information credibility. In another study, Zhang, Zhao, Cheung & Lee (2014) examined the effect of online reviews of products on consumer purchasing decisions and found that the argument quality characterized by persuasiveness and informativeness had a significant effect on consumers' purchasing intentions. Similarly, Zhang, Peng, Zhang, Wang & Zhu (2014) stated that the reliability of the source and the informativeness of the posts played an important role in retweeting, which is the behavior as a result of processing the information in social media environments. Erdoğan & Mucan Özcan (2020), in their research on Instagram influencers, revealed that the argument quality in the posts shared by Instagram influencers had a positive significant effect on attitude towards advertising and purchase intentions.

In the study, it was found that popularity (PO), which is one of the heuristic clues in the decision process regarding the accuracy of information in social media was is also a significant predictor. Accordingly, it

could be stated that pre-service teachers, take into account the quality of the information shared as well as the popularity of the sender, the number of likes and the number of followers, while deciding on the accuracy of information shared on social media platforms. Heuristic clues are especially preferred because they facilitate decision processes (Chaiken, 1980). This finding is supported by Gonçalves, Almeida, dos Santos, Laender & Almeida (2010), who concluded that popularity is associated with source reliability in social media platforms where content creation is uncontrolled. In studies based on the HSM model in the literature, it was stated that situations related to popularity had an effect on decision processes. Liu, Liu & Li (2012) stated that resource popularity had an effect on information retweeting behavior, which is the behavior of users after processing the information presented on microblogging sites. Zhang, Zhao, Cheung & Lee (2014) reported in their study that the popularity ranking of the product reviewer on online product review sites and the amount of product reviews he/she made had a direct effect on consumers' purchase intentions. Similarly, Du, Ke, He, Chu & Wagner (2019) found that the popularity of loan companies' official accounts in the social media platform (WeChat) was influential on user decisions. In another study, Edwards & Edwards (2013) stated that positive comments about teachers in online environments were influential on students' course evaluations and that they made more positive affective learning and motivation evaluations. Similarly, Wright & Scholl (1999) concluded that the instructional messages given by the teachers who used body language effectively in the classroom environment, interacted with the students and gave them feedback, were remembered at a higher level and that more value was given to these teachers. This was in line with the finding that popularity had an effect on the decision process. A striking situation here is that perceiving the sender as popular rather than as an expert was meaningful and at the forefront in the decision process regarding the accuracy of the information. This situation could be thought to be mutually related to the influence of source credibility on popularity in social media platforms (Gonçalves, Almeida, dos Santos, Laender & Almeida, 2010). In addition, when evaluated from a post-truth point of view, users who are popular on social media platforms create a micro-reality world by sharing their reality with their followers within their own micro networks. This causes the perception of the followers to be shaped by the reality of popular users as well as causes this reality to guide the behaviors. If experts make comments that contradict the prejudices in this micro-reality world, they are derided as unreliable or elitist (Lewandowsky, Ecker & Cook, 2017).

In the study, it was found that belief in the accuracy of the information shared in social media had a strong and significant effect on attitude towards the information in social media. Accordingly, preservice teachers' attitudes towards information in social media are strongly related to the accuracy of the information they perceive. Positive emotional orientations are developed based on the correctly perceived information in social media, and these attitudes shape the behaviors. This result is consistent with the conclusion drawn by Ajzen & Fishbein (1977) that attitudes emerge as a result of an individual's evaluation of a person, physical object, behavior or a policy. In addition, the relationship between the accuracy of information and the attitude towards information is consistent with the result obtained in the study that the information shared on social media is believed after confirming it (Table 5). Moreover, studies based on the HSM model similarly reported that the information credibility had an effect on brand or product attitude (Xiao, Wand & Chan-Olmsted, 2018), attitude towards the course (Edwards & Edwards, 2013) and behavioral intention (Zhang, Zhao, Cheung & Lee, 2014).

6. Implications and Limitations

This study is thought to contribute to the literature in terms of examining which variables are influential on the decision process for the accuracy of information on social media platforms, where information can spread freely in an uncontrolled manner. Understanding the variables influential on the decision processes regarding the accuracy of information in social media, especially of the teachers who play an active role in the teaching process, will help teachers in improving the verification process of the information. In addition, the study contributes to the literature with respect to providing a perspective for social media platforms in the context of the HSM model. In this respect, the results of this study will shed light on researchers and

practitioners who work on the accuracy of information in social media. Furthermore, the result that popularity and argument quality were influential on the decision process regarding the accuracy of information in social media environments provides guidance for both individuals and institutions who share posts in social media platforms. Accordingly, highly convincing arguments, which are supported by scientific evidence and which do not include subjective judgments, could be used so that information sharings reach large audiences in social media platforms. In addition, social media influencer could be used in marketing and advertising activities due to the effect of popularity on the perception of accuracy of information. Similarly, it is recommended that teachers who use social media in the teaching process should pay attention to the quality of the content in their sharings so that they can be understood correctly by their students.

The most important limitation of the study was that the study was conducted on preservice teachers studying in teacher-training programs. Social media users in different fields (science, health, social sciences, etc.) and at different age levels may have different views about the accuracy of information. Therefore, in future research, the model can be retested on social media users in different fields and at different age levels. In addition, several variables such as involvement (i.e., the level of involvement in the information shared), homophily (i.e., the socio-demographic similarity with the social media user doing sharing), and social advocacy (i.e., the social acceptance level of the social media user sharing posts) may have an effect on the decision process regarding the accuracy of the information. For this reason, causal comparative studies could be designed in the future in which the relevant variables will be included. Lastly, qualitative studies could be designed to try to make sense of the variables of expertise, trustworthiness and validity, which were found to have no effect on the decision process regarding the accuracy of the information in the model tested, by examining in depth why they did not have an effect.

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