IMPACT OF USER AND SOLOMO CHARACTERISTICS ON SOLOMO REUSE INTENTION: THEORY OF CONSUMPTION VALUE

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ABSTRACT
Social-Local-Mobile (SoLoMo) services are emerging mobile services combining software and hardware techniques to enable users to interact and communicate by obtaining location-based information at any time and place in real time. SoLoMo is growing in the form of different applications including Facebook, Instagram, LINE, and Google maps. In spite of that less attention has been paid to examine determinants of users' intention to reuse the SoLoMo services. However, based on consumption value theory, this study aims to examine the value drivers and investigate the effect of user's characteristics and SoLoMo characteristics on user's intention to reuse the SoLoMo services. The results indicate that innovativeness, user's knowledge, epistemic value and social value are significant drivers for user's intention to reuse the SoLoMo service. While functional value and emotional value has not significant impact on it. The study has significant implications to research and theory.

Keywords: SoLoMo services, consumption values, SoLoMo characteristics, user's characteristics, SoLoMo reuse intention
JEL Codes: E21

I. INTRODUCTION
The great progress in technologies and mobile devices create great opportunities for the social network to interact with the local surrounding. SoLoMo as a mobile application consisting of social network and location based services that available to fulfil the users immediate needs via mobile device (Heinemann & Gaiser, 2015). SoLoMo services has three types of network system such as social network services (SNS), mobile social services (MSS), and location-based services (LBS) (Lin & Yang, 2016). Social network system allow users to make connection with local surrounding by making the personal profile based on users privacy such as living place, interest and education (Boyd & Ellison, 2007). Smart phones are the main source that allow users to interact with one another by integrating mobile devices and location-based information. Mobile social services provide the vast opportunity using SNS comprising of Facebook, WhatsApp, Twitter and Instagram. It provides simple to vast manner of communication like seamless video, photo, multimedia text chatting, emoticons, emoji, stickers, and location information, and allow users to make contact with people in real time (Deng, Lu, Wei, & Zhang, 2010; Gibbs, 2008). MSS refers to LINE and IMO system. Location based services enable users to sight neighboring location information providing the important and modified information to users based on the current location and specific time (Turban, King, Lang, & Lai, 2009). Popular Location based services are GPS system and Google Maps.

SoLoMo service is the center of many mobile applications and hold large number of bases. As it covers different usage context, so it is possible to identify the determinants that drive the usage intention to use the services. According to Bhattacherjee (2001), the long term success of service depends on the actual and continues usage of that service. Determinant of users' intention to reuse the service is important to understand in order to maintain the market share. It is also important for future research about the determinant of usage intention to reuse the services. Sheth, Newman and Gross (1991) proposed consumption value theory that identifies the five different values to check the effect behavior toward the service. These values are functional value, emotional value, epistemic value, social value and

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conditional value. Sometime, when searching some Shopping Mall users easily can access required information through SoLoMo services that's functional value. Secondly users can easily find the location of a particular mall or shop and then check the quality of products and can also share with friends which is social value. Moreover, when sometime users get bored on some public place in waiting for someone, they can spend time by using SoLoMo services that is emotional value.

Users are more innovative while some are late adopter of any new service. As innovators have much knowledge about the usage of technology and much focus on the values that effect the behavior about that service. Late adopters having less knowledge about the service which also affect the usage intention to reuse the service. Rogers, Burdge, and Korsching (1983) argued that in general innovation research, it is noted that individuals who are highly innovative are more active information seekers about new ideas other than else. They make themselves in position to cope with high levels of uncertainty and develop more positive intentions toward acceptance of technology. Although SoLoMo service has been discussed in different research context, less attentional has been paid to examine the SoLoMo characteristics and user's characteristics on using the SoLoMo services. However, this study proposes research model based on theory of consumption value for examining the impact of users' characteristics and SoLoMo characteristics on SoLoMo services reuse intentions. The study discusses implications to theory and practice.

II. LITERATURE REVIEW

According to Yang and Lin (2017), SoLoMo services has three types named as social network services (SNS), mobile network services (MNS), and location-based services (LBS). SoLoMo makes in position for people to not only easily create, show, comment about things, but to also immediately share with your surroundings can communicate and can discuss their unique and innovative opinions, ideas or contents with each other. SoLoMo characteristics include functional value, social value and epistemic value. Functional value which is define as the perceived utility acquired from an alternative's capacity for functional, utilitarian, or physical performance. It deals the offering of product with the utilitarian functions and services. Functional value is related to the characteristics of a product and other features that show the performance of product to its users (Creusen & Schoormans, 2005). By the supposition of users being more coherent and economic, functional value, oftentimes represented by features of product such as solidity is usually considered the main power of people's choice (Sheth et al., 1991; Haider and Ali, 2015; Kassem et al., 2021; Roussel et al., 2021; Sajid and Ali, 2018; Senturk and Ali, 2021; Audi et al., 2021; Ali, 2015). This functional value has greater impact on the usefulness which a user perceived about the product which may lead the intention to reuse the service.

Social value is the perceived utility acquired from an alternative's association with one or more specific groups. Ellison, Steinfield, and Lampe (2007) argue that there is stronger relationship in social network system and the networks of relationships among people who live and work in a society, enabling that society to function effectively. Emotional value is the perceived utility acquired from an alternative's capacity to arouse feelings or affective states. Epistemic value is the perceived utility acquired from an alternative's capacity to arouse curiosity and provide novelty. Whereas, conditional value is the perceived utility acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker. Past studies (Ming-Sung Cheng, Shih-Tse Wang, Ying-Chao Lin, & Vivek, 2009; Tzeng, 2011) have shown that epistemic value of SoLoMo services can influence customer's purchase or usage intention.

User Knowledge plays a crucial role in the success of a technology. Tait and Vessey (1988) identified user knowledge as a substitute measure for the success of technology. Users' knowledge influence their perception whether the technology is easy to use which improve their intention to reuse of that technology. Baroudi, Olson, and Ives (1986) pointed out that contributory ordering of user involvement, user knowledge, user information satisfaction, and system usage variables, essential for improving system quality and certifying for the successful system implementation. Rogers (2003) focuses on a new domain for the purpose to measure of innovativeness of an individual. They argue that the adoption of any technology or service comes in a scale named as personal innovativeness which is usually related to the users of the technology. Users' innovativeness is defined as "*the willingness of an individual to try out any new information technology*" From a practical side, it is crucial to measure or know about the individual innovativeness that help in mapping directly into the adopter group of people, because it is important to observe which user readily and easily adopt new technology and proceed toward the innovativeness and are early adopter having special liable inclinations. Then the important thing is that to know about the group of people with implementation efforts qualities and who are more likely and have easily grip on the new technology.

III. THEORY OF CONSUMPTION VALUE

Theory of consumption value was proposed by Sheth et al. (1991) and its purpose to analyze the factors of intention to use the service in form of different Apps. The theory argues that there are different consumption values for different level of consumers and situations. The theory identifies five consumption values named as functional value, social value, emotional value, epistemic value, and conditional value (Sheth et al., 1991). These values critically influence consumer decision choices. The theory indicates that value depends on characteristics of a technology (e.g., SoLoMo characteristics). In align with the theory of consumption value, SoLoMo characteristics include functional value, social value and epistemic value. These values develops users intentions to continue use the SoLoMo Services. Deng et al. (2010) modified the theory of consumption values into four value system named as functional value, emotional value, social value and monetary value for understanding the satisfaction of customers and loyalty in order to check the intention toward reuse of SoLoMo services.

IV. RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

As shown in Figure 1, this study proposed a research model based on theory of consumption value. This study proposes that user's characteristics and SoLoMo characteristics have direct impact on users' intentions to continue use SoLoMo services. We consider users' characteristics such as users' knowledge and innovativeness and SoLoMo characteristics such as functional value, social value, epistemic value and emotional value as important drivers that drive the users' intentions to reuse SoLoMo services. The research model is shown in Figure 1.

Figure 1: Research Model
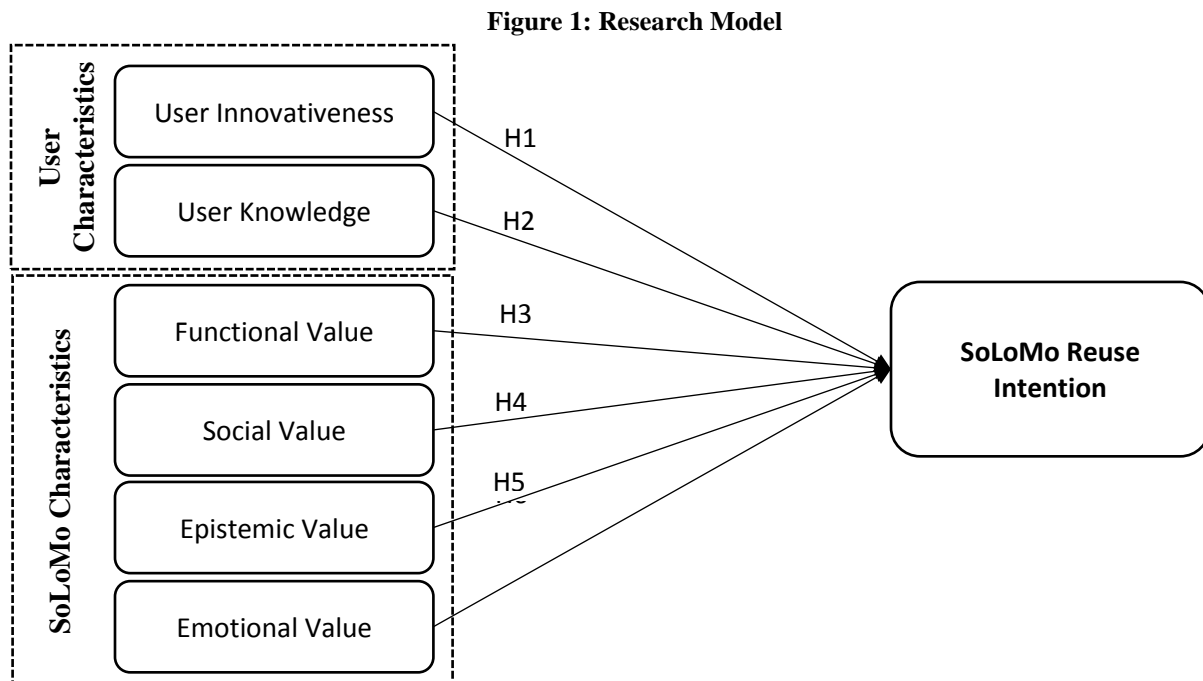
Apart from the other effect on the usage intention to reuse the service, we also seen the effect on innovativeness on users' intention to reuse SoLoMo services. It could be seen in literature that innovation lies with the risk. Innovative users always are risk adopter and the chance of success is greater to know about new technology. Innovation is associated with greater risk, uncertainty, and imprecision (Agarwal and Prasad, 1998; Thiesse, 2007) . Innovative user's tries to explore new things and want to use new service or technologies. So, it is reasonable to argue that innovativeness is characterized with the usage intention to reuse the SoLoMo services. According to Rogers (1995), innovators and early adopters are able to cope with higher level of uncertainty and try things use and then reuse. Therefore, innovative individuals are more likely to cope with new technologies.

H1: Users' Innovativeness has positive impact on their intention to reuse the SoLoMo services.

For adoption of technology such as SoLoMo services, most users do not have any or much knowledge about that technology and experience to help them form clear perception beliefs. Knowledge about any new technology will lead the users to use the technology properly. Knowledge about technology not only give confidence to reuse the technology and may not only strongly amplify their perception of potential benefits, but also heighten their confidence

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in their capabilities to handle the technology while using that technology. However, users' knowledge of SoLoMo services leads users to continue using the SoLoMo services.

H2: Users' knowledge is positively associated with their intention to reuse the SoLoMo services.

User satisfaction with functional needs usually referred with the functional value of SoLoMo services. SoLoMo services provides the information which is related with the location and help users to get immediate information about the location such as rout plan, traffic reports, local store offers, local coupons etc. It can be seen that value has great importance as functional value. The functional value has direct impact on user's intention to reuse the services. we argue that functional value of SoLoMo services, which is defined as the perceived value of providing information/services to SoLoMo users at the right place and at the right time to support their immediate needs. Xu, Teo, Tan, and Agarwal (2009) indicated that functional value motivates user's intention to engage in specific behavior to reuse any technologies. However, following hypothesis is proposed:

H3: Functional value has a positive effect on users' intention to reuse SoLoMo service.

Usually on public transportation, whenever users get bored and feel uncomfortable, they may check and play with smartphone. It is not for getting useful information or engaging in social interaction, but it for emotional adaptation. They may perform different activities like watching social gossips, play causal games in order to pass waiting time. Users perceived it as a valuable source for emotion adaptation and increase user's intention to reuse the services. Therefore, we considered that emotional value which previously defined as the level of releasing tension from interactions with SoLoMo services. Sanz-Blas, Ruiz-Mafé, Marti-Parreño, and Hernández-Fernández (2013) indicated that emotional value positively related with the attitudes towards SoLoMo service and cause to increase the intention of users to reuse the SoLoMo services. However, we hypothesize that

H4: Emotional value has a positive effect on users' intention to reuse the SoLoMo services.

It is stated that a customer assessment can be judged by the utility of a product or services which is received by an individual and what is given in return of that utility (Zeithaml, 1988). Social value is defined as the utility perceived by users which is acquired from an substitute's connotation with one or more specific social groups (Lin & Yang, 2016). SoLoMo service make users in position to interact with friends without any difficult or any time constrain. Social service help users to carry on friendship by social interaction. Whenever users see the post of their friends, then it is easy for them to respond their friends and understand what their friends want to say. So, it can be claimed that SoLoMo services are treasured for fulfilling their social needs. According to Kim (2011), users easily provide social, emotional support and companionship support in social network communities. However, it is hypothesized that

H5: Social value has positive impact on users' intention to reuse the SoLoMo services.

Epistemic value is the utility which is perceived by the users that acquired from an substitute capacity to arouse curiosity and provide novelty or may satisfy a desire for knowledge (Lin & Yang, 2016). Epistemic value plays vital role for users to perceive usefulness about any technology which may lead the user's intention to reuse of that technology. Similarly, the epistemic value of SoLoMo services positively influences users' intentions to continue using the SoLoMo services.

H6: Epistemic value has positive impact on users' intention to reuse the SoLoMo service.

V. RESEARCH METHODOLOGY
V.I. CONSTRUCT MEASUREMENTS

The research model presented in Figure 1 is examined by conducting an online cross-sectional survey with the users of SoLoMo services. The survey questionnaire was consisted of all measures of variables specified in the proposed research model (see Figure 1) and users' demographic characteristics is developed for data collection. The construct measures were adopted from past studies, and validated through an expert panel, a pre-testing, and a pilot test (50 SoLoMo users). All measures are measured by five-point likert scale from strongly disagree representing 1 to strongly agree representing to 5. User knowledge consisted of six items were adapted from the Kim, Mirusmonov, and Lee (2010). Measures of users' innovativeness were adapted from the Lu, Yao, and Yu (2005). Moreover, measures of functional value, epistemic value and social value were adapted from the Yang and Lin (2017). Users' intention to reuse the SoLoMo service adapt from He et al. (2021). The reliability test of pilot study showed that Cronbach's alpha of each variable was above 0.7, indicating that all variables were reliable to proceed further with data collection and analysis.

V.II. DEMOGRAPHIC DESCRIPTIVE

Total 391 valid responses were received and used for further analysis. Out of 391 responses, 242 participants were male and remaining were female. Majority of respondents were in the age group of 26-30 year old age which were 190 respondents (48.6 percent of the total respondents), 114 respondents were between 20-25 year old, while 87 respondents were the 31-40 year old. From occupation perspective, majority of the respondents were from public servants (61.9%), 1.5% of respondents were from employee, 13.3% of the respondents were students, 9.5% of the respondents were researchers and 13.3% of the respondents were from others. 25.1% were from universities students, 42.5% were universities graduate, 29.2% were postgraduate and 3.3% were from others. 17.1% of the respondents were using SoLoMo services over 3-5 years, while 53.5% of the respondents were using SoLoMo services over more than 5 years. Majority of the respondents were using WhatsApp (42.5%) and the least of the respondents were using GPS tracking system. The details of demographic descriptive is shown in Table 1.

Table 1: Demographic Analysis

Variables		Frequency	Percentage
Gender	Male	242	61.9
	Female	149	38.1
Age	20-25	114	29.2
	26-30	190	48.6
	31-40	87	22.3
Occupation	Entrepreneur	2	0.5
	Public Servant	242	61.9
	Company Salaries Employee	6	1.5
	Students	52	13.3
	Researcher	37	9.5
	Others	52	13.3
Education	University Student	98	25.1
	University Graduate	166	42.5
	Postgraduate	114	29.2
	Others	13	3.3
Experience	Less than 1 year	16	4.1
	1-2years	48	12.3
	2-3years	67	17.1
	3-5years	51	13
	Over 5 years	209	53.5
SoLoMo Services	WhatsApp	166	42.5
	Facebook	98	25.1
	Twitter	53	13.6
	Instagram	48	12.3
	GPS Tracking	6	1.5
	LINE	12	3.1
	Others	8	2

V.III. DATA ANALYSIS

This study followed two-step approach recommended by Anderson and Gerbing (1988). First, we examined the measurement model to analyze the reliability and validity of the construct measure. Second, we examined the structural model based on structural equation modeling using SmartPls3.

VI. ANALYSIS OF MEASUREMENT MODEL

All results of measurement model are shown in Table 2, items loading are (indictor reliability) greater than 0.7 and therefore are acceptable (Barclay, Higgins, & Thompson, 1995; Fornell & Larcker, 1981). Cronbach's alpha values and composite reliability estimates are 0.707 or higher, indicating that each construct exhibited strong internal reliability (Hair et al., 2006). Convergent validity is tested by computing average variance extracted (AVE), the result indicated that AVE values are exceeded 0.50 (Hair et al., 2014), indicating that the constructs are valid.

Table 2: Reliability and Convergent Validity Results

Construct	Items	Factor Loading	VIF	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Epistemic Value	EPV1	0.776	1.693	0.712	0.851	0.59
	EPV2	0.723	1.305			
	EPV3	0.839	1.908			
	EPV4	0.729	1.419			
Emotional Value	EV1	0.824	1.456	0.767	0.839	0.635
	EV2	0.742	1.303			
	EV3	0.822	1.475			
Functional Value	FV1	0.818	1.487	0.72	0.843	0.641
	FV2	0.777	1.340			
	FV3	0.807	1.445			
Social Value	SV1	0.736	1.640	0.767	0.851	0.589
	SV2	0.808	1.583			
	SV3	0.817	1.785			
	SV4	0.705	1.414			
SoLoMo Services Reuse Intention	UI1	0.768	1.650	0.772	0.854	0.595
	UI2	0.789	1.521			
	UI3	0.822	1.783			
	UI4	0.701	1.363			
User Knowledge	UK1	0.754	1.618	0.724	0.84	0.637
	UK3	0.825	1.791			
	UK6	0.813	1.260			
User Innovativeness	USERI1	0.809	1.570	0.707	0.837	0.632
	USERI2	0.722	1.218			
	USERI3	0.849	1.610			

Discriminant validity is examined via two methods: Fornell Larker Criterion and multitrait-multimethod matrix (HTMT) ratio. As shown in Table 3, the diagonal values which the square root of average variance extracted values

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(AVEs) are greater than the respective correlations of the variables, indicating the confirmation of the discriminant validity in the study (Fornell & Larcker, 1981).

Table 3: Discriminant Validity

Constructs	EMV	EPV	FUV	SOV	RUI	UIN	UKN
Emotional value (EMV)	**0.797**						
Epistemic value (EPV)	0.673	**0.768**					
Functional value (FUV)	0.526	0.689	**0.801**				
Social value (SOV)	0.558	0.623	0.643	**0.768**			
Reuse Intention (RUI)	0.431	0.593	0.636	0.736	**0.771**		
Users Innovativeness (UIN)	0.503	0.660	0.638	0.522	0.574	**0.795**	
Users Knowledge (UKN)	0.571	0.671	0.696	0.584	0.682	0.629	**0.798**

Note: The diagonal values are square roots of the AVEs, while all other values are correlation coefficients between two constructs.

Henseler et al. (2015) proposed new technique named as multitrait-multimethod matrix (HTMT) ratio to address discriminant validity and provided guidelines on how to handle discriminant validity issues in PLS-SEM. Henseler et al. (2015) suggested cut off point 0.85 and 0.90 for establishing discriminant validity between two reflective constructs. $HTMT_{0.85}$ is noted to be the most conservative criterion. If the HTMT ratio is below 0.85, then discrimination validity between the two constructs is established. The HTMT results are presented in Table 4, all HTMT ratios are less than 0.85, indicating no discriminant validity problem in this study.

Table 4: HTMT Results

Constructs	EMV	EPV	FUV	SOV	RUI	UIN	UKN
Emotional value (EMV)							
Epistemic value (EPV)	0.806						
Functional value (FUV)	0.729	0.817					
Social value (SOV)	0.717	0.808	0.802				
Reuse Intention (RUI)	0.582	0.764	0.753	0.809			
Users Innovativeness (UIN)	0.203	0.729	0.742	0.703	0.814		
Users Knowledge (UKN)	0.114	0.203	0.634	0.685	0.770	0.757	

VII. ANALYSIS OF STRUCTURAL MODEL

To test the hypothesis by using the Bootstrapping procedure Structural model was used with 5,000 resamples (Hair, Ringle, & Sarstedt, 2011). Figure 2 presents the PLS-SEM results of the structural model. PLS results of the research model with standardized path coefficient and Variance also explained in Table 5. All main path coefficients are significant at .001 except functional value and emotional value, indicating that four hypotheses are supported and two are not supported by the data. The research model explains 67.5% variance in the SoLoMo services reuse intention. User innovativeness (b=0153, t= 2.892, p = 0.004) and user knowledge (b = 0.523, t = 6.015, p = 0.000) have significant positive impact on user's intention to reuse SoLoMo services, supporting H1 and H2. Functional value (b=0.079, t= 1.312, p = 0.19) and emotional values (b= - 0.087, t= 1.859, p = 0.064) have not significant impact on the SoLoMo reuse intention, indicating that H3 and H4 are not supported by the data. Social value (b=0.529, t= 8.53, p = 0.000) positively effect's the user intention to reuse the SoLoMo services, supporting H5. Epistemic value (b= - 0.289, t= 3.656, p = 0.000) has significant negative influence on the user's intention to reuse the SoLoMo services, inversely supporting H6.
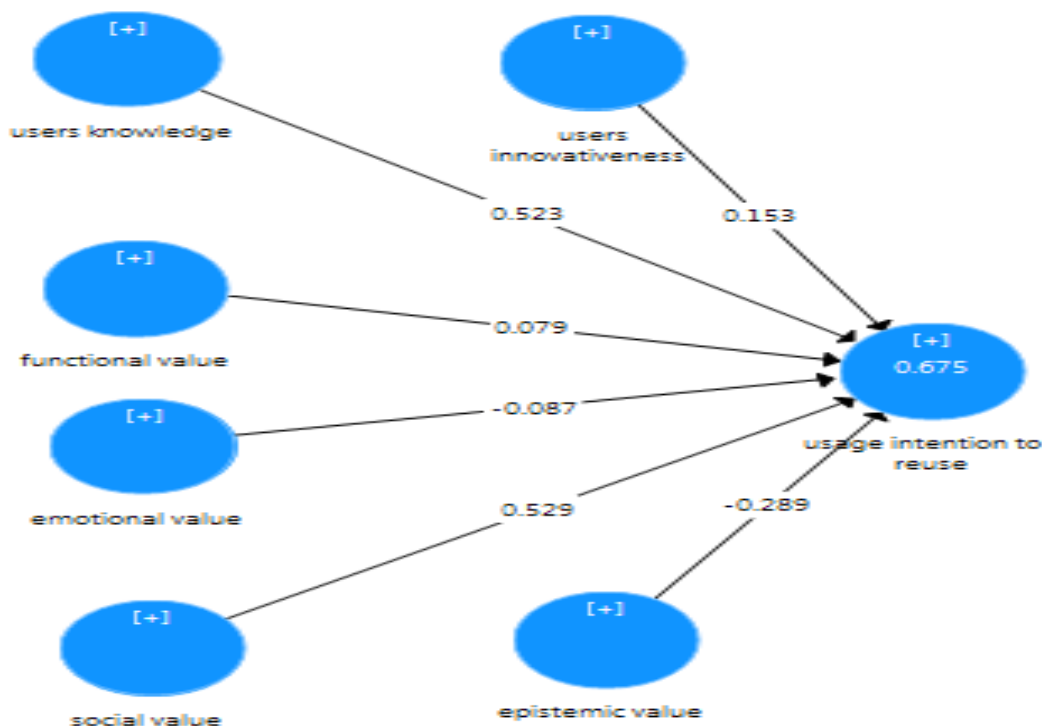

Figure 2: PLS-SEM Results

Table 5: PLS-SEM Results

Hypothesis	Path Coefficient	Sample Mean	Standard Deviation	T-Statistics	P Values
H1: User's innovativeness -> Usage intention to reuse	0.153	0.154	0.053	2.892	0.004
H2: User's knowledge -> Usage intention to reuse	0.523	0.526	0.087	6.015	0.000
H3: Functional value -> Usage intention to reuse	0.079	0.081	0.060	1.312	0.190
H4: Emotional value -> usage intention to reuse	-0.087	-0.080	0.047	1.859	0.064
H5: Social value -> usage intention to reuse	0.529	0.521	0.062	8.530	0.000
H6: Epistemic value -> usage intention to reuse	-0.289	-0.291	0.079	3.656	0.000

VIII. DISCUSSION AND CONCLUSION

This study aims to examine the impact of users' characteristics and SoLoMo characteristics on users' intention to reuse SoLoMo services. The result shows that users' SoLoMo reuse intention is basically driven by the user's characteristics comprising of users' innovativeness and users' knowledge and also by SoLoMo characteristics consisting of social value and epistemic value. Whereas, functional value and emotional value are non-significance on users' intentions to reuse the SoLoMo services. This study has implications to research and practices. First, previous researcher focused on user intention to use the SoLoMo services, but the little work is done in the field to reuse the SoLoMo services. There is only limited research considering the synthetic nature of SoLoMo services. Since SoLoMo services have been flourishing and will create new business trends, it is necessary to perform academic research on their underlying determinants. Second, we apply the theory of consumption values as theoretical framework for exploring the potential effect of each consumption value. Our results validate that the theory of consumption values is a satisfactory generalization, and also suggest that the values of user's innovativeness, user's knowledge, social value and epistemic value are the most influential determinants of SoLoMo services continuance intention. Third, the practitioner should know the user's interest and belief. Some users are less innovator, and some are more innovators may affect their intention to continue using the SoLoMo services. Fourth, the practitioners should also focus on

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improving the epistemic value of SoLoMo services by introducing new technological features, such as virtual reality (VR), augmented reality (AR), or chat bots, thereby providing users with novel experiences. It will create positive affect on users' willingness to continue using the SoLoMo services.

IX. LIMITATION AND FUTURE RESEARCH

As all studies have limitations, this study also a few limitations and accordingly future research areas are suggested. First, the study is conducted in the geographical context of Pakistan and the result can only be generalize to Pakistani users of SoLoMo services. There should be further research conducted in other regions in order to gain a better understanding about how these issues play vital role in different cultures. Second, we do not distinguish in this study users' individual reasons for reusing SoLoMo services, even though there may be driving determinants different for different individuals. Further research might focus on different groups of users for example, those concentrating on LBS-based commerce, mobile social services, or dating-oriented mobile services.

Moreover, future studies may attempt to explore other possible determinants based on theory of consumption value. Additionally, future can consider other theories such as media richness theory proposed by the Aljukhadar, Senecal, and Ouellette (2010). Fifth, this study only examines the direct impact of SoLoMo characteristics and user's characteristic on user's intention to reuse the SoLoMo services, future researches can examine the moderating effect or mediating effect of other factors like instrumental factors (perceived ease of use and perceived usefulness).

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