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A Study of Impacting Factors on Technology Adoption in the Public Sector of Pakistan

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Abstract
Social media technology provides different services for the greater benefit of citizens. Like many other developing nations, Pakistan has a low level of social media technology adoption in the public sector. The purpose of this study is to investigate the obstacles and hindrances of the adoption of social media from the public sector's point of view. In this study, a changed variant of the unified theory of acceptance and use of technology (UTAUT) demonstration is utilised to examine the factors impacting the take-up of social media by the public sector in Pakistan. The outcomes demonstrate that the factors affecting the adoption of social media in Pakistan are identified as: usability, value, social impact, innovation issues, lack of proper training and human resource, information security, and trust. Suggestions for online services providing e-organisations and information regarding the government top management approach are likewise considered in this study.
Keywords: Technology Adoption; Social Media; Unified Theory of Acceptance and use of Technology (UTAUT); Public Sector of Pakistan.

1. Introduction

Social media use is an emerging technology in Pakistan at government level. Social media has become a main communication channel connecting users with family, friends, and colleagues. People are posting all sorts of information in many forms, such as text and audio,

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as well as video in order to share their feelings on social networking sites (Akram & Kumar 2017). Accordingly, public sector organisations around the world have realised the importance of social media and are increasingly using it to communicate with their citizens. Although social media provides various benefits, risks also exist that are not only related to time, money, and wasted effort, but which also extend to loss of reputation and trust. Hence, organisations must understand which factors impact social media adoption most.

Pakistan is in the southern region of the Asian continent. South Asian countries are similar in various ways, such as geography, I.T. infrastructure, literacy rate, and the adoption and development of e-government services. According to Almakki (2009); Senadeera (2016); and later Aftab (2019) stated that South Asian countries have challenges, such as the lack of good I.T. infrastructure, lack resources and demographic issues and many more. Social media adoption in the public sector is in its infancy in the developing world, where countries share common challenges in the implementation of online services. The web presence greater use and optimal use of ICT indicates that most government entities utilise websites to disseminate information to the public. However, in Pakistan, the adoption of social media by the public sector is growing. Today, most country-level organisations use social media, and the most used platforms include Facebook, Twitter, YouTube, Instagram, and LinkedIn, but little has been done to evaluate the factors that impact the adoption of these services.

This study aims to investigate the factors influencing social media adoption in the public sector of Pakistan. This study will also discuss the use of social media in the public sector and other emerging technologies and their ultimate impact on society. Therefore, the research questions are defined as: *what factors significantly influence the adoption of social media in Pakistan's public sector organisations? Furthermore, how can Pakistan benefit from this framework of adoption and use social media as a tool for good governance?*

This research study is the first study of its kind that focusses on social media services in the public sector of Pakistan. Previous studies have been done on e-government services. Therefore, this research study is a unique exploration of social media adoption among different information departments of Pakistan's government. This research can contribute significant aspects and experience of technology adoption at public organizations, which will help to promote good governance in Pakistan. The pattern of adoption and its requirements in prosperous countries could also be an eye-opener to inquisitive individuals working in government intuitions of Pakistan which in turn will encourage them to promote social media as a beneficial tool on good government and the wider population's participation in decision making.

Remaining part of the study focus on literature review of concepts, model development, and methodology. Next we demonstrate and discuss estimation output and in the end stated concluding remarks with policy implications.

2. Literature review

Generally defined, online social media tools are information and communication technology platforms (Chourabi, 2012 and Apostol, 2020) such as blogs, wikis, Facebook, web-based communication spaces (e.g., chat rooms), audio, photo, and video sharing, virtual worlds, Twitter, and many more. Earlier forms of internet-based interactions between government

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and citizens were known as e-government or Web 1.0 platforms (e.g., government websites) and only configured for one-way communications and limited forms of citizen feedback (Fan, 2011). However, the newer Web 2.0 platforms – based on how they are implemented – offer administrators and citizens a platform to collaboratively create the data and information shared over the Internet (Bryer & Zavattaro, 2011; and Chun, et al. 2010). As the interaction with these technologies becomes a daily norm, citizens discover they can join online public communities and help collaboratively create solutions and deliverables (Lee & Kwak, 2012 and Motsie, 2015).

Advanced social media adoption occurs when the social media platform is implemented to its full interactive potential, but it does not achieve full collaborative interaction (Brainard & Derrick-Mills, 2011). Interactions are less informal, and the government determine that what interactions should occur through social media. For example, a citizen posts a Facebook page and sets it up to receive replies, but the administrator never goes back to respond to any replies made to the original post (Baud et al., 2013). The concept of social media adoption in the public sector appears to be new in most developing countries. However, it is a critical phenomenon that combines the critical characteristics of the technology facilities and public administration. Thus, it concentrates on customer service in the 'front office' and organisational structure in the 'back office'. Social media adoption is based on the integration of information technology capacity – primarily websites, intranets, and databases – to allow self-service through an I.T. medium (Bigdeli & Cesare, 2011; Budd & Harris, 2004). Budd and Harris (2004) observed that e-government in the U.K. often represented a change in status for government technology. Unlike the U.S., the initial burst of reform focussed on technology instead of the business culture of Whitehall. The office of e-Envoy (OeE) acted as coordinator for standards rather than as a change agent. In terms of electronic transactions and interactions between government and other main groups, four main blocks of e-government have been classified: citizens, businesses, employees and government to governments, and public bodies. In the same way, Norris and Fletcher, (2003) analysed the successful implementation of social media in the U.S. through its phases of progress, and recommended that social media policies should be adopted and tested by other industrialised and developing countries. The phases were classified as: (a) catalogue; (b) transaction; (c) vertical integration; (d) horizontal integration; and (e) modelling and methodologies.

According to Obayelu and Ogunlade (2006) and recently Alao and Brink (2020) ICTS (information communication technology systems) have been useful tools to enhance the economic livelihood of the poor in developing countries such as Nigeria and Ghana. Traditional media and new ICTS have played a crucial role in diffusing information, particularly to the poor living in rural communities, while most poverty alleviation programmes in these countries have been disseminated through television and radio. The unified theory of acceptance and use of technology (UTAUT) is a technology acceptance model formulated by Venkatesh et al. (2003); Venkatesh and Zhang, (2010); Venkatesh, Thong and Xu (2016) and Dwivedi, et al., (2019) in user acceptance of information technology toward a unified view. The UTAUT aims to explain user intentions to use an information system and subsequent usage behaviour. The theory postulates four fundamental

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constructs: (1) performance expectancy, (2) effort expectancy, (3) social influence, and (4) facilitating conditions. Venkatesh, Thong and Xu (2016) argued that the four constructs play a significant role as direct determinants of user acceptance and usage.

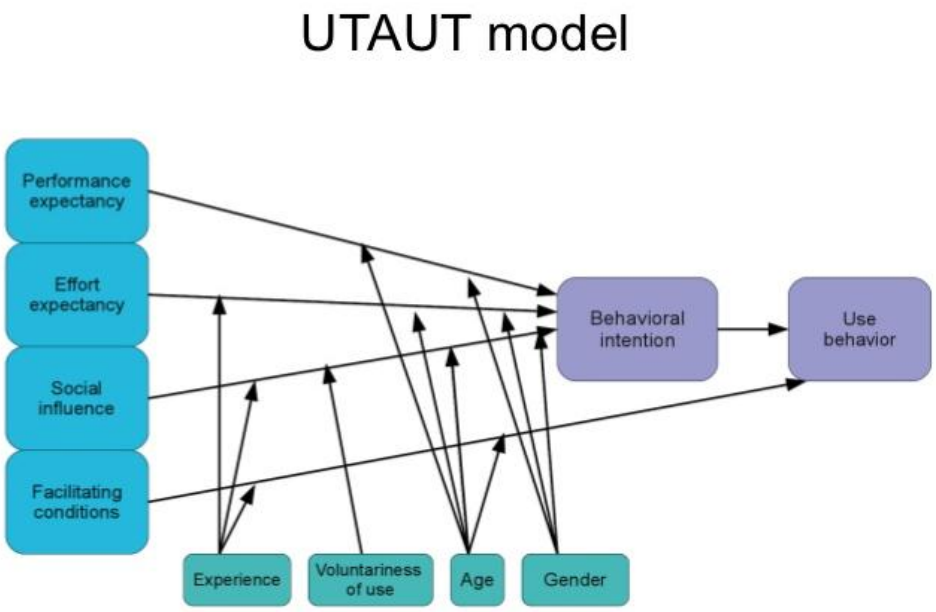

Figure 1: Actual UTAUT Model

This model consolidates eight engineering acknowledgement models (these are 'theory of Reasoned Action [TRA], Technology Acceptance model [TAM], the motivational model [MM], theory of planned behaviour [TPB], C-TAMTPB, the Model of PC use [MPCU], Innovation Diffusion Theory [IDT], and social cognitive theory [SCT]). As stated by Venkatesh et al. (2003), later, Venkatesh, Thong and Xu (2016) UTAUT gives 70 per cent of the difference to utilise technology, which is a more significant amount compared to formerly known models. Past studies on UTAUT was (Alawadhi & Morris, 2008; Kumar, et al., 2007; Alshehri, et al., 2012; Harby, Qahwaji, & Kamala, 2012). Also, recently Dwivedi, et al., (2019) re-examined UTAUT towards a revised theoretical model. The Different elements were distinguished throughout the examination, from claiming e-government administrations to what was conceptually coordinated under UTAUT.

The UTAUT model proposes four constructs to figure out technology acceptance level: first is pperformance expectancy. On this level an individual accepts that using the new system will help him or her to attain gains in job performance" (Venkatesh et al., 2003). But common misunderstanding of many electronic consumers is that the new electronic systems are difficult in use and not helpful in improving performance. UTAUT suggests that this construct is the strongest interpreter of individual behaviour. Second, effort expectancy is "the level of ease related to the utilization of the system" (Venkatesh et al., 2003). Effort expectancy captures the concepts from existing models: perceived simple use, complexity and simple use (Venkatesh et al., 2003). It explains whether e-government services are easy

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to use or not, how the user interacts with the interface, and if it's cost effective or not. UTAUT shows that effort expectancy affects user approach towards usage. Third, social influence is "the degree to which a user perceives that he or she should use the new system" (Venkatesh et al., 2003). This construct is resulting from existing models to capture the concept of social influence: subjective norm, social factors and image (Venkatesh, 2003). It plays a crucial role within the usage of any technology. During this study, social influence is investigated in term of peer influence, because the peers spend most of the time together and simply influence one another. Fourth, facilitating conditions is "the degree to which a user believes that an organisational and technical infrastructure exists to support the utilization of the system" (Venkatesh et al., 2003). The facilitating condition to use a technology or service is extremely important, in order that with the specified environment, equipment and assistance it's easy to use. It's an immediate predictor of the particular usage of the technology (Venkatesh, et al., 2003).

2.1 Technology Adoption Theory

Governments in both developed and developing countries spend enormous amounts of money on new data and corresponding innovations with the specific goal of facilitating the smooth running of business and related bodies. These ventures should bring about the acknowledgement and reception of these advances. Analysts utilise distinctive types of innovation acknowledgment models. As per Agarwal, Sambamurthy, and Stair (2000) there is an expansive body of research concerning the selection of data innovations, which can be characterised as the utilisation or acknowledgement of another innovation or another item (Agarwal et al., 2000; Karahanna, Agarwal, and Angst, 2006). A scope of hypotheses and models clarify client acknowledgment and appropriation of innovation in the data frameworks space. These incorporate the hypothesis of reason activity (Fishbein & Ajzen, 1975), the innovation acknowledgement display (TAM) (Davis, Bagozzi, & Warshaw, 1989), the motivational model (Davis, Bagozzi, & Warshaw, 1992), the model of pc use (Thompson, Higgins, & Howell, 1991), the dispersion of developments (DOI) (Rogers, 1995), the hypothesis of arranged conduct (Taylor & Todd, 1995), social subjective hypothesis (Compeau & Higgins, 1995) and the bound together hypothesis of acknowledgment and utilisation of innovation (UTAUT) (Venkatesh et al., 2003). So as to maintain a strategic distance from the constraints of the UTAUT model consolidates and builds from every one of them. UTAUT has developed four aspects: execution hope, exertion anticipation, social impact, and encouraging condition. These clarify 70 per cent of innovation acknowledgment and use conduct. Venkatesh et al. (2003) contended that these four aspects play a significant role as immediate determinants of client acknowledgement and utilisation (Venkatesh et al., 2003).

2.2 Obstacles to e-government in Pakistan's public sector

The Electronic Government Directorate (EGD), founded in October 2002, works as part of the Ministry of Information Technology in Pakistan. The first significant online services venture was set up in 2005 to empower residents and organisations to get the benefits of online access in a more productive, proficient, and savvy way. For instance, it provided benefits around the clock for clients through a 'neighbourly web' get to an agenda. This

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facility can save a great deal of time by providing access to records, in paper-free conditions, with an accessible system available for a general community, as well at private, legislative, and all authoritative levels.

These days, discussions become a consuming and open deliberation in underdeveloped nations, particularly in Pakistan, and the administration is spending a great many rupees on ICT framework; however, these endeavours give rise to strange outcomes. Moreover, the government of Pakistan is confronting a significant number of obstructions and difficulties identified with financial advancement, usage, and change of e-government extending from the area of general society into the open divisions of Pakistan. Factors which impede the adoption of communication technology are inadequate techniques and activities, 'ill-conceived and executed' approaches, the internal and external ineptitude of the administration, absence of monetary assets, government vision, and the lack of will of officials to execute such a framework in Pakistan.

The e-services do not have any significant bearing concerning the majority, and still, the general population part ventures are running on the manual framework. Pakistan needs to restore the positive relationship of having the 'best in class' advancements and human resources who are prepared to extend e-services and use their expertise to achieve better e-administration. Aside from that, there is a very substantial requirement for an enormous framework to be finished and distributed all through Pakistan in order to facilitate wellbeing, pay rates, e-learning, the lessening of printed material, transportation, and more ATM machines. Such usage would help general e-government exercises and tasks in the country. In addition, there could be a sliding monetary and social structure in Pakistan.

2.3 Social media in the public sector

In June 2005, the National E-Government Council (NEGC) acknowledged the 'E-Government Strategy Five Year Plan', which was intended to offer a fundamental framework. This framework was for all administration organisations, and it outlined and created basic applications for all administration divisions, giving e-administration to members of the population, and setting up guidelines for e-government ventures (Pak e-government system, 2005). The objectives of the e-administration of Pakistan are to expand productivity, adequacy, straightforwardness, and responsibility in essential leadership, not excluding the improved provision of an open administration to its citizens both effectively and cost adequately (Pak e-government methodology, 2005). As per an official report of the Pakistan Telecommunication Authority (PTA, 2010), telecommunication had achieved 65.4 per cent penetration, and towards the end of 2010 the development of broadband had achieved exceptional growth, at more than 100 per cent year-on-year.

2.4 E-government adoption

Different analyses have alluded to the selection and utilisation of e-government supported organisations as a 'goal' (Carter & Bélanger, 2005; Warkentin, Gefen, Pavlou, & Rose, 2002) or 'readiness' (Fakhruzzaman & Dimitrova, 2020). As per Kumar et al. (2007), appropriation is 'a basic choice of utilizing, or not utilizing, online administrations'. Furthermore, Warkentin et al. (2002) explained that e-government appropriation is 'the expectation to "take part in e-government", which includes the goals to get data, to give data, and to ask for e-

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taxpayer driven organisations'. The fruitful use of these e-taxpayer supported organisations is imperative for developing countries (Gupta, Dasgupta, & Gupta, 2008). Akman, Yazici, Mishra, and Arifoglu (2005) clarified that the achievement of e-government reception relies upon members of the local population. Like some other developments, the start of e-government brings various difficulties for the local population and governments (Zakareya & Irani, 2005). As stated by the United Nations (2010), the majority of developed countries profit from e-government services; and at present there is much room for comprehensive change. Various specialists (Fu, Farn, & Chao, 2006; Gilbert et al., 2004: Gupta et al., 2008; Kumar et al., 2007; Tung & Rieck, 2005; UN, 2010) recommend additional examinations in the area of e-government selection.

2.5 Social media government inhibitors in Pakistan

As noted, developing nations are confronting difficulties associated with the change stage, and there is a need to re-examine government frameworks with the specific end goal of communicating an open administration to their partners using ICTs. Pakistan, like other developing countries, is additionally confronting a great number of difficulties. There is a need to speed up social media adoption throughout the country. It has been observed that it might be useful for local government agents and strategy producers to identify other significant issues for possible handling by e-government at the local government level in Pakistan. The accompanying inhibitors came about because of the investigations of e-government in Pakistan (e.g. Alsawafi & Sridhar, 2003; Kayani, Ehsan, Iqbal, & Humayun, 2011; Kazmi, 2010; Qaiser & Khan, 2010; Yaghoubi, Kord, & Shakeri, 2010). The last research explores the essential hindering elements 'for the adoption of social media with regards to Pakistan. However, this basic research investigates necessities to substantiate their conceptual findings with regards to Pakistan.

2.5.1 Organisational structure

The usage of social media in public sector organisations requires responsibility from the highest level of administration. Other than the need for responsibility to be taken at the highest level, tremendous capital needs to be invested, and operational expenditure is likewise required for the smooth execution of e-government initiatives. For the most part, governments demonstrate a reluctance to disburse the monetary resource needed to help start social media services, which is one of the obstacles preventing advancement (Qaiser & Khan, 2010).

2.5.2 Strategic planning

Arranging and control are likewise considered to be a standout amongst the most critical issues. Online networking frameworks require thorough and extensive planning to avoid the frustration of e-government ventures. Alsawafi and Sridhar (2003) call attention to the fact that 'web-based social networking vision requires a group that is data and mechanically educated to get to the data they require'. Bui, Sankaran, & Sebastian (2003) characterise e-readiness as 'the bent of an economy to utilise ICT to relocate customary organisations into the new economy'. A selection of the more vital parameters of e-readiness are: proficient subjects, mindfulness about accessible web-based social networking administrations, range of abilities for utilising accessible online administrations, and advanced foundation; namely web

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and workstation access to the subjects.

As per the consequences of one examination led in Pakistan, deficient access to the Internet, low levels of security, insufficient comprehension of focal points on the web, and absence of usage of I.T. strategy were recognised as hindrances for the execution of e-government (Kayani et al., 2011).

2.5.3 ICT infrastructure

Online infrastructure is another urgent issue that is expensive to build up from scratch (Kazmi, 2010). In most nations, foundational infrastructure is outsourced to decrease the financial burden on the administrations (Huff, 2001). Other than the ICT framework, security, protection, and online enactment are also considered essential foundational necessities. Governments must provide an abnormally high level of security on their sites. In this way, they will have the capacity to create and maintain citizens' trust, thus improving their readiness to utilise e-services provided by the government.

2.5.4 Political setup

Pakistan's political system has not been stable since its independance. Changes in government unequivocally influence whether projects are completed or prematurely terminated. At times, projects have been abruptly halted when a new administration assumes control. These progressions influence the general development of events and projects, and some of the time activities are deferred or abandoned (Rehman & Esichaikul, 2010; Rehman, Esichaikul, & Kamal, 2012). At that point, it will result in different and clashing strategies of the legislatures and result in the approaches frequently ending up being just temporary. Since the usage of e-government is a legislative undertaking, in this way, Pakistan's administration is capable of giving the assets (Dada, 2006).

2.5.5 Operational resources

Resource commitment is additionally one of the vital issues for fruitful execution of online networking administration in Pakistan. Asset duty is estimated taking into account H.R., hardware, and monetary assets. Without these assets, the effective completion of activities is unrealistic. The maintaining of ventures requires a manageable supply of assets. Similarly, this applies to the asset of political help. Hardware is also considered an essential requirement in advance of the venture, and its absence creates delay in meeting the task due dates.

2.5.6 Stakeholders needs and issues

The most vital inside factor for the practical usage of social media in the public sector is that the user is the client. Teicher, Hughes, and Dow (2002) observed that 'dissimilar to organizations, which may overlook some market portions, governments must endeavor to serve all natives on comparative terms'. The government ought to comprehend nationals' needs, and they ought to consider that they are consumers of taxpayer-supported organisations; thus government endeavours should move towards a path keeping in mind the end goal of fulfilling the consumers' needs (Alsawafi and Sridhar, 2003).

2.5.7 Social and economic issues of e-governance

Alongside the issues previously mentioned, behavioural concerns lie at the highest point of different issues. The government needs to apply a considerable measure of push to persuade citizens towards the utilisation of web-based social networking administrations, by promoting

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the value and usability of such applications. In this way, accessible e-service usage can expand (Yaghoubi et al., 2010). Addressing national necessities and tackling the maximum capacity of local government in Pakistan should centre around the following changes: (a) rebuilding their I.T. frameworks, (b) experiencing auxiliary and operational changes as a response to changing resident needs, (c) enhancing necessary leadership process while embracing I.T., (d) maintaining the consistency and quality of data as an overall collaboration through channels of the association, (e) pursuing an effective systematic process while embracing I.T., (f) preparing residents by building their I.T. ability, (g) incremental mindfulness about P.C. proficiency, (h) to advance the use of accessible online networking administrations (Kayani et al., 2011; Jain, Srivastava, Kumar, Upadhyay, & Kamal, 2011).

Social obstacles in ICT adoption include all aspects of social issues that are affected by ICT ventures influencing hierarchical structures and which, consequently, could make a substantial impact on the general public. Most of these obstructions can be found in Fig. 1. There is an unmistakable high impact of a low educational rate and reduced level of basic instruction in Pakistan, which contributes to influencing e-government appropriation and its administrations. The low compensation bundles for the workers at the legislative level are another issue, which obstructs the radoption of e-government in Pakistan. An immense proportion of the national reserve funds and profit is spent by the administration of Pakistan to handle such obstructions, which leaves a sufficient investment fund for e-government ventures. The financial situation is critical for the dissemination of ICT in any country. E-government activities can turn out to be essential in contributing to – and upgrading – the proficiency of the economy, and GDP development is likewise given potential to grow. By and large, the factors which constitute hurdles are known to be infrastructure, political, economic, social, and users' viewpoints, which should be directly engaged and channelled to enhance the accomplishment of the social media project's objectives.

3. Methodology

This study used both quantitative and qualitative research design in its consideration of the impact of social media in the public sector. The selected research design enabled the attainment of the enumerated objectives. For this research, various data sources (questionnaires and interviews) were used to determine how social media adoption leads to better government services and citizen participation in the public sector division of Pakistan’s government. Following the UTAUT model, it was expected that these main factors would also affect social media adoption in Pakistan. This study is based on the UTAUT model proposed by Venkatesh et al. (2003) and later re-examined by the Dwivedi, et al., 2019, which mainly aims to study if performance expectancy, effort expectancy, social influence, and facilitating conditions affect the user's intention to use social media. The applied research model is presented graphically in Figure 2 and econometrically in equation 1.

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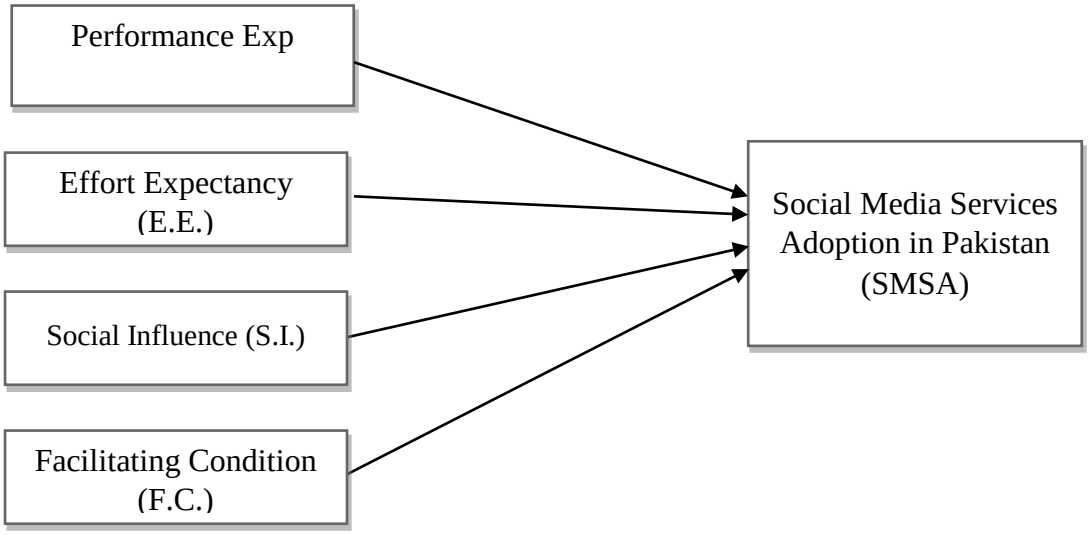

Figure 2: Proposed UTAUT model (Proposed Model 1)

$$SMSA = \beta_0 + \beta_1 PE + \beta_2 EE + \beta_3 SI + \beta_4 FC + \in \quad (1)$$

Where SMSA = Social Media Service Adoption in Pakistan

Performance Expectancy (P.E.) was measured with three items (quick task completion, easier information, time saving) inspired by (; Ahmad, Markkula, and Oivo, 2013; Venkatesh et al., 2003). All the items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The adopted scale also showed strong reliability of α = 0.80. Effort expectancy (E.E.) was measured with three items (straightforward to learn, very easy to use, useful and beneficial) inspired by (Ahmad, Markkula, & Oivo, 2013; and Venkatesh et al., 2003). All the items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The adopted scale also showed strong reliability of α = 0.871. Social influence (S.I.) was measured with three items (more prestige by using social media applications, my colleagues advise me to use it, resources are useful) inspired by Ovais et al. (2013) and Venkatesh et al., (2003). All the items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The adopted scale also showed strong reliability of α = 0.891.

Facilitating conditions (F.C.) were measured with three items (available resources, special training, and human resource) inspired by Ovais et al., (2013) and Venkatesh et al., (2003). All the items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The adopted scale also showed strong reliability of α = 0.898. Social Media Service Adoption (SMSA) was measured with three (Facebook, Twitter, YouTube) items inspired by Ovais et al. (2013) and Venkatesh et al., (2003). All the items were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The adopted scale also showed strong reliability of α = 0.893. Following the UTAUT model, it could be expected that these main factors also affect social media adoption in Pakistan's public sector. The applied research model is presented in Fig. 2.

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Data were gathered through both primary and secondary sources. Participants were government officials and staff who worked for social media as well as related public information programmes individuals such as education, health, and local citizens of the capital city (Islamabad) of Pakistan. Primary data were collected through the survey method—interviews and questionnaires. A structured questionnaire on determinants was prepared by the researcher, which was completed by the respondents (64 government media officers based in the capital city of Pakistan, who use social media as part of their primary job duties). The questions were designed based on previous research (Venkatesh & Davis, 2000; Venkatesh et al., 2003; Ovais et al. 2013; and Dwivedi, et al., 2019). The measurement was based on a five-point Likert type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). In addition to the survey method, the results were also supported by an interview with the respondents who would be participating in the research process. This was to verify answers they gave in their questionnaire and to obtain other findings the survey was not able to capture. The secondary sources of data were published articles from computer, business, and I.T. journals, books, and related studies on the Internet, e-commerce, and computer development. The data gathered from these instruments and sources was then subjected to analysis. Descriptive and comparative approaches characterised the analysis.

4. Results and Analysis

This research was based on quantitative (questionnaire-based) methodology. The research data consisted of 64 questionnaires in total from government employees of Pakistan, working mostly in the capital city of Islamabad, who used social media as part of their jobs. All the public officials were closely involved with the use of social media as their prime duty. The research questionnaire was based on 22 questions ranging from general (e.g. gender and occupation) to specific subjects such as an evaluation of social media applications in their daily job routine.

In this research, the findings present all answers to the questionnaires in percentage form. The questionnaires are divided into five parts according to the proposed UTAUT Model:

1. Basic information
2. Effort expectancy
3. Performance expectancy
4. Social influence
5. Facilitation conditions

Table 1: Results of Complete Sample Descriptive and Reliability Statistics

Variable	N	Min.	Max.	Mean	Std. Deviation	Cronbach's Alpha
Performance expectancy (P.E.)						
Quick task completion	64	1	5	3.86	.924	
Easier information	64	2	5	3.81	.889	
Timesaving	64	2	5	3.83	.846	

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Variable	N	Min.	Max.	Mean	Std. Deviation	Cronbach's Alpha
Mean PE	64	2	5	3.83	.763	.80
Effort expectancy (E.E.)						
Very easy to learn	64	2	5	3.89	.994	
Very easy to use	64	2	5	3.80	.962	
Useful and beneficial	64	1	5	3.53	.908	
Mean E.E.	2	5	3.74	3.72	2	.871
Social influence (S.I.)						
More prestige by using social media applications	64	1	5	3.69	1.097	
My colleagues advise me to use social media	64	1	5	3.42	.989	
Resources are good to use	64	1	5	3.95	1.030	
Mean SI	1	5	3.69	3.72	1	.891
Facilitating conditions (FC)						
Available resources	64	2	5	3.77	.750	
Special training	64	1	5	3.12	1.175	
Human resource	64	1	5	2.89	1.100	
Mean F.C.	64	2	5	3.26	.769	.898
Social media service adoption (SMSA)						
Facebook	64	2	5	4.00	.854	
Twitter	64	2	5	3.56	1.037	
Youtube	64	2	5	3.81	.889	
Mean SMSA	64	2	5	3.79	.733	.893

4.1 Performance Expectancy (P.E.)

The performance expectancy factor was measured by three main questions based upon three variables. These questions were asked of the public sector government employees (n = 64) who used social media as their prime duty.

Table 2: Results of Descriptive and Reliability Statistics—Performance Expectancy (P.E.)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Cronbach's Alpha
Performance expectancy (P.E.)						
Quick task completion	64	1	5	3.86	.924	

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Easier information	64	2	5	3.81	.889	
Timesaving	64	2	5	3.83	.846	
Mean PE	64	2	5	3.83	.763	.80

The respondents believe that social media services are good to use because they are useful in communication (mean = 3.86), assist speed of performance fast in daily job or work completion (3.81), and save time (3.83) for other activities. The average mean of the performance expectancy constructs about 3.83, which shows that employees are behaving in a positive way when using social media applications because they are more useful. The mean value of performance expectancy (P.E.) (3.83) tends to be close to 4. It implies that respondents, on average, agree that performance expectancy is essential for professional capacity. Since the Cronbach's alpha value of our performance expectancy (P.E.) scale is greater than 0.70, so there exists enter-items consistency; therefore, this scale of performance expectancy (P.E.) is reliable.

4.2 Effort expectancy (E.E.)

Three questions measured the effort expectancy factor; these questions were also asked of the government employees (n=64) in Pakistan who used social media as part of their job duties.

Table 3: Results of Descriptive and Reliability Statistics—Effort Expectancy (E.E.)

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Cronbach's Alpha
Effort expectancy (E.E.)						
Very easy to learn	64	2	5	3.89	.994	
Very easy to use	64	2	5	3.80	.962	
Useful and beneficial	64	1	5	3.53	.908	
Mean E.E.	2	5	3.74	3.72	2	.871

The final results show that respondents shared positive views about effort expectancy (average mean = 3.72). The overall views of the effort expectancy of the respondents were that social media applications are easy to learn (3.89), use (3.80), and useful (3.53) to spread information. This result shows that government employees are willing to use social media services, bearing in mind the projected effort to use these applications and services. The mean value of effort expectancy (E.E.) (3.72) tends to be close to 4 and it implies that respondents on average agree that performance expectancy is essential for professional capacity. Since the Cronbach's alpha value of our effort expectancy (E.E.) scale is greater than 0.70, so there exists enter-items consistency; therefore, this scale of effort expectancy (E.E.) is reliable.

4.3 Social influence (S.I.)

Three questions analysed the social influence factor. These questions were also asked of the participants who were working in government (n = 64) media organisations.

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Table 4: Results of Descriptive and Reliability Statistics—Social Influence (S.I.)

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Cronbach's Alpha
Social influence(S.I.)						
More prestige by using social media applications	64	1	5	3.69	1.097	
My colleagues advise me to use social media	64	1	5	3.42	.989	
Resources are good to use	64	1	5	3.95	1.030	
Mean SI	1	5	3.69	3.72	1	.891

The results show that respondents like to use social media applications, but some factors might have implications for adoption. For instance, in response to the question regarding gaining prestige by using social media applications (3.69) mostly the respondents are in agreement, while suggestions from colleagues are less encouraged (3.42), and the available media resources (3.95) are reliable to use. Respondents overall believe that social media services are making their life more convenient in many ways. The mean value of social influence (SI) (3.72) tends to be close to 4. It implies that respondents, on average, agree that performance expectancy is vital for professional capacity. Since the Cronbach's alpha value of our social influence (S.I.) scale is higher than 0.70, so there exists enter-items consistency; therefore, this scale of Social Influence (S.I.) is reliable.

4.4 Facilitating conditions (F.C.)

The facilitating condition factor was measured by three main questions based upon three variables. These questions were asked of the public sector government employees (n = 64) who used social media as part of their prime job duties. However, respondents did not agree with the level of resources currently available, such as training, and specialised resources; therefore, some factors here might influence the adoption and usage of social media in Pakistan's public sector.

Table 5: Results of Descriptive and Reliability Statistics—Facilitating Conditions (F.C.)

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Cronbach's Alpha
Facilitating conditions(FC)						
Available resources	64	2	5	3.77	.750	
Special training	64	1	5	3.12	1.175	
Human resource	64	1	5	2.89	1.100	
Mean F.C.	64	2	5	3.26	.769	.898

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For instance, more than half of the respondents were reported agreed or strongly agreed which indicate that value of available resources (3.77), specialised training (3.12), and relevant human resources (2.89). However, it should be noted that the facilitation condition is considered less significant among other variables in this research study than the performance, social, and effort expectancy. The mean value of facilitating conditions (F.C.) (3.26) tends to be close to 4 and it implies that respondents on average agree that performance expectancy is vital for professional capacity. Since the Cronbach's alpha value of our facilitating conditions (F.C.) scale is higher than 0.70, so there exists enter-items consistency; therefore, this scale of facilitating conditions (F.C.) is reliable.

4.5 Social media service adaption (SMSA)

The mean value of social media service adoption (SMSA) (3.79) tends to be close to 4; it implies that respondents on average agree that performance expectancy is vital for professional capacity. Since the Cronbach's alpha value of our social media service adoption (SMSA) scale is greater than 0.70, so there exists enter-items consistency; therefore, this scale of Facilitating Conditions (F.C.) is reliable.

Table 6: Results of Descriptive and Reliability Statistics—Social Media Service Adaption (SMSA)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Cronbach's Alpha
Social Media Service Adaption (SMSA)						
Facebook	64	2	5	4.00	.854	
Twitter	64	2	5	3.56	1.037	
Youtube	64	2	5	3.81	.889	
Mean SMSA	64	2	5	3.79	.733	.893

4.6 Results of Validity and Reliability Test

The four constructs of the UTAUT model which were used in this study have direct effects on user intention or usage (Venkatesh et al., 2003). These constructs are performance expectancy, effort expectancy, social influence, and facilitation conditions.

Table 7: Results of Validity and Reliability TEST

Constructs (independent variables)	No. of Items	Cronbach's Alpha
Performance expectancy	3	0.80
Effort expectancy	3	0.871
Social influence	3	0.891
Facilitation conditions	3	0.898

The reliability of the instruments can be calculated by testing for internal consistency. Internal consistency can be determined by the procedure developed by Cronbach (1951). According to Hinton et al. (2004), Cronbach's coefficient alpha values were selected to observe the measure's internal consistency. Furthermore, four ranges of reliability were

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suggested: excellent (0.90 and higher), high (0.70–0.90), high moderate (0.50–0.70), and low (0.50– and lower). Overall, the reliability of each construct mentioned above shows that all constructs have high reliability. The Cronbach's alpha results were between 0.80 in performance expectancy construct, 0.871 in effort expectancy construct, 0.891 in social influence construct, and 0.898 in the facilitation conditions construct, an indication that the constructs are internally consistent. Reliability is a measure of the same construct.

4.7 Correlations Matrix

The results of the correlation matrix indicate the degree and significance of the association between social media services adoption (SMSA) in Pakistan and its determinants, namely performance expectancy (P.E.), effort expectancy (E.E.), social influence, and facilitation condition. It is aimed at doing preliminary research on whether there is a relationship between SMSA and its determinants or not. The value of the correlation coefficient of performance expectancy (P.E.) with social media service adoption (SMSA) in Pakistan is approximately 0.3 and significant ($p < 0.05$), which implies that performance expectancy (P.E.) has a positive association with social media service adoption (SMSA).

The value of the correlation coefficient of effort expectancy (E.E.) with social media service adoption (SMSA) in Pakistan is around .62 and significant ($p < 0.01$); it implies that effort expectancy (E.E.) has a positive association with social media service adoption (SMSA). The value of correlation coefficient of social influence (S.I.) with social media service adoption (SMSA) in Pakistan is approximately 50 per cent and significant ($p < 0.01$), which implies that social influence's (S.I.) positive association with social media service adoption (SMSA). The value of the correlation coefficient of facilitation condition (F.C.) with social media service adoption (SMSA) in Pakistan is approximately 21 per cent and significant ($p < 0.05$), it implies that facilitation condition (F.C.) has a positive association with social media service adoption (SMSA).

Table 8: Results of Correlation Matrix

		PE	EE	SI	FC	SMAS
PE	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	64				
EE	Pearson Correlation	.503**	1			
	Sig. (2-tailed)	.000				
	N	64	64			
SI	Pearson Correlation	.502**	.440**	1		
	Sig. (2-tailed)	.000	.000			
	N	64	64	64		
FC	Pearson Correlation	.156	.200	.291*	1	
	Sig. (2-tailed)	.217	.113	.020		
	N	64	64	64	64	
SMSA	Pearson Correlation	.296*	.619**	.500**	.207	1

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Sig. (2-tailed)	.017	.000	.000	.100	
N	64	64	64	64	64

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

4.8 Regression Results and Discussion

The results indicate that effort expectancy is more prominently captured as a factor in social media service adoption by public service employees in Pakistan. This is one of the essential findings because managers do not pay attention to effort expectancy in order to capture social media service adoption services in Pakistan. This research will enable managers to utilise this body of knowledge and consider social media service adoption in Pakistan from an effort expectancy perspective.

Moreover, the findings also show that social influence is one of the significant factors that influence social media service adoption in Pakistan. This is plausible because Pakistan is a collectivistic country where people receive and solicit advice and in turn are influenced by other people, such as their colleagues and friends.

Therefore, the outcomes of this model display that two factors are significant in the Pakistani context, and managers should pay specific attention to them in devising their strategies. Effort expectancy since the T (distribution) value of effort expectancy is positively significant (4.744 > 1.96), so it can be said that effort expectancy has a positive impact on social media service adoption (SMSA) in Pakistan. Since the T (distribution) value of social influence (S.I.) is significant (2.78 > 1.96), the results indicate that social influence (S.I.) also plays a decisive role in enhancing the social media service adoption (SMSA) in Pakistan.

Moreover, performance expectancy (P.E.) and facilitation condition (F.C.) have insignificant influences on social media service adoption (SMSA) in Pakistan because the T (distribution) is less than requisite values. The coefficient of determination explains how much variation in the dependent variable is being explained by our independent variables such as 0.46 per cent variation in SMSA is being explained by our four independent variables. Since the F value of our regression model is significant (P < 0.05), it implies that the model is a good fit. Table 9 of the regression model below shows the results of Equation 1.

Table 9: Regression Results

Model		**Unstandardised Coefficients**		**t**	**Sig.**
		B	**Std. Error**		
1	(Constant)	1.253	0.465	2.691	0.009
	P.E.	-o.139	0.114	-1.218	0.228
	E.E.	0.504	0.106	4.744	0.000
	S.I.	0.300	0.108	2.782	0.007
	F.C.	0.025	0.096	0.264	0.793

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5. Conclusion

This study's purpose was to investigate the difficulties and hindrances of the adoption of social media administrations from the public sector's point of view. In this exploration, a variant of the unified theory of acceptance and use of technology (UTAUT) display is utilised to examine the components (effort expectancy, performance expectancy, social influence, facilitation conditions) impacting the take-up of social media benefits in Pakistan. The survey results confirmed that effort expectancy (E.E.) and social influence (S.I.) have a positive impact on social media service adoption (SMSA) in Pakistan. Moreover, performance expectancy (P.E.) and facilitation condition (F.C.) have insignificant influences on social media service adoption (SMSA) in Pakistan because the T (distribution) is less than requisite values.

The coefficient of determination explains how much variation in the dependent variable is being explained by our independent variables such as 0.46 per cent variation in SMSA is being explained by our four independent variables. Since the F value of our regression model is significant ($P < 0.05$), it implies that the model is a good fit. In short, the outcomes demonstrate that the elements affecting the selection of social media benefits in Pakistan are identified with usability, value, social impact, innovative issues, lack of proper training and human resource, information security, and trust. Suggestions for online services providing e-organizations and government top management approach likewise considered in this study.

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