



Means of Engagement Towards Online Dawah and Student Perception: Principal Component Analysis

Muharman Lubis^[1] and Nugraha Saefudin^[2]

¹ Master of Management Student, Universitas Widyatama, Bandung, West Java.

² Management Departement, Universitas Widyatama, Bandung, West Java.

Abstract. The advancement of technology gives much benefit to the ummah in terms of support their daily routine task or improve the quality of the work, either in the form offline or online. Due to the accessibility, richness, flexibility and rapidness of content delivery, some Muslim uses the technology to spread Islamic wisdom such as da'wah through online media. Theoretically, the adoption of the technology will deliver successes in term of encouraging other Muslim to improve their quality of Ibadah (worshiping Allah) and invite the non-Muslim to look after the beauty of Islamic tenets. The issue arises due to the significant changes of social awareness towards the content of the da'wah which previously distribute through traditional approach in the form of paper, poster or book. This paper will explore the means of engagement in online da'wah, which targeted student as the audience. Meanwhile, there are several factors such as society trust and understanding level from different users, which do not always provide the optimal support for the uses. The result showed that eight factors in the initial solution have eigenvalues greater than 1. Together, they account for almost 70% of the variability in the original variables, while 1 component have 26% variance.

Keywords: Engagement, Adoption, Innovation, Perception, dawah.

1 Introduction

The existence of digital-type of information technology has made the online medium especially blogs become the high likely preference place for religious preaching, which acts as an instant information editor, easily accessible and a means to answer all religious questions [1]. Thus, the Internet provide utilize this opportunity to increase its functionality in developing the spiritual type of environment that can connect various and different type of person [2][3][4]. Therefore, to justify using the Internet for religious objective, it often occurs that traditional religious groups and individuals adopt certain rhetorical discourses or images from the Internet, describing them in ways to be suitable for religious use or spiritual engagement [2]. Meanwhile, the use of social media for da'wah will not only increase Muslim audience but also attract other non-Muslim communities to understand Islam properly despite bad publicity in the mainstream media and reshape Islam misunderstanding portrayed and understood among them [3]. According to Rogers, innovations have the ability to understand and apply complex technical knowledge essential for bringing in the innovation from outside the

© The Author(s) 2024

V. Mardiansyah and R. A. E. V. Targa Sapanji (eds.), *Proceedings of the 1st Widyatama International Conference on Management, Social Science and Humanities (ICMSSH 2024)*, Advances in

Social Science, Education and Humanities Research 886,

https://doi.org/10.2991/978-94-6463-608-6_19

social system [19]. In addition, structure of a social system affects the individuals' attitude toward the innovation and consequently, the rate of adoption of innovation, which constitutes a boundary within which the diffusion take place. In another sector, the study in e-Health found that triability as one important factor to determine the adoption in Roger's theory show the opposite result as it does not influence the rate. The computer log records showed that 45% of registered users that utilized the system have been stopped wholly to use it after trial because of various reasons such as patient have no business at all after meeting the doctor, offline appointment and preferably phone used [31]. In Islamic tenets, everyone has a mandatory action for da'wah, as the activity to spread the truth about tawheed (the oneness of Allah) and inform the humankind about Muhammad as the messenger of Allah. It is really important to inspire people in doing good deeds and avoid evil acts in their life. With the advancement of technology, certain people try to adopt several types of this medium as the means to provide explanation about Islam in the better way due to its availability and accessibility [20, 21]. Therefore, certain factors should be considered to measure the successful adoption such as honesty, accuracy, flexibility, integrity and compatibility to compare with the traditional means. Indeed, at some extent, the source informant is required to gain academic certification or socially recognized by the communities before they can talk about Islam to avoid the negative implications that can create mass misunderstanding of certain fundamental concepts [22].

2 Literature Review

Research identifies that audience learn some of religious teachings from various religious programs and channel, where over 90% of adult listen to the Holy Quran, seek Islamic advice and guidance and promote adherence to Islamic teachings in daily life, learn some Islamic values and good behaviour from others' practice, which relates highly to the response to deal with the problem [4]. Therefore, the form of da'wah or deliver Islamic communication can be described in several type namely *tabligh* (general information), *taghyir* (social change), *khairu ummah* (exemplary community) and *akhlaq al-karimah* (noble behavior, civil society). The person in charge of conveying the message must show good and appropriate manner that is consistent as well as provide solution to problem in the target audience to avoid conflict [5]. Other studies have found that some educators are struggling to follow the accelerated media convergence and acceleration, resulted the training institutions are working together to develop curricula to provide the guidance and indicator in order to achieve effectiveness and efficient working methods [6]. Meanwhile, organization have important role to encourage the adoption of certain technologies, in which they need to design training and other educational programs that motivate employees to use an innovation for enhancing human capabilities and performance [31].

Interestingly, study also found religious indicator influence positively the security awareness of student to follow organization or institution policy or procedure [15]. The research also found five important predictors of online religious engagement namely attitude-Internet perception, subjective norms of Muslim community, the Internet self-efficacy, religiosity, and offline media usage for religious purposes [7]. Essentially,

offline religious activities among Muslims still the most important predictor variable that best explained the level of online religious engagement. Therefore, the importance of utilization of Internet for spreading da'wah cannot be excluded from the fact that borderless communication has been arise with various country built their sophisticated infrastructure as the impact of globalization [7][8]. In addition, da'wah activities and organizations have grown very strongly throughout the Muslim world and have adopted new forms and objective in this decade though there are two main developments, which are partly contradictory; a renewed aspiration for international unity of all Muslims and the establishment of modern nation-states with their different religious traditions and political interests [9]. Generally, there are numerous research that showed high failure rate in IS project management, which major problem in the respect to uncertainty of legal concept and lack of focus on the policy, which hinder the adoption [13]. Meanwhile, several factors also contributed to the success implementation of online learning system adoption such as the organization and management, content creation and presentation, self-assessment and self-study, collaborative learning, task-oriented activities and effective communication between actors in the teaching learning process [33]. Technical issues have been never an actual problem in running the da'wah training program for the student because the extensive facilities and infrastructures available in the settlement, where masjid, school and community have provided their full assistance and utmost support [10]. Meanwhile, other research revealed that media selection does not affect religious engagement among Muslim students but the influence of religious needs and content is still applicable in selecting and using specific means or channel [7, 11]. In addition, motivation of religious engagement and commitment is strongly related to the selection of the means in terms of transferring messages and content, fulfilling specific needs and accommodate alternative channel [11, 12]. The social environment can influence the form of practice, judgment, opinion and belief, whereby it occurs when other people persuade at certain extent multiple times [15, 16]. Furthermore, it is essential for provider to explore the data management to look for framework capacities in enhancing effectiveness and proficiency based on service-oriented architecture [34]. Interestingly, the industries have the capabilities to refine their products in highly efficiency by receiving instant feedback from live platform such as social network, making it easier to solve problem and increase the performance [17].

3 Research Methodology

3.1 Research Instrument

In this study, the researcher focusses to investigate the relevance of five attributes of an innovation toward the rapid advancement of technology that might shift the perception of user on adoption stage. In addition, there are some factors that might influence positive or negatively the decision to adopt technology significantly, such as government incentives, organizational cultures, internal resources, technological literacy, religious indicator, brand recognition, and so on [7, 13, 15, 28, 30, 32]. Previously, people want the innovation to be consistent with the existing technical and social environment in the form of compatibility, but certain current case found out people using market exclusivity to promote pharmaceutical innovation [29]. Meanwhile, certain digital product

might not offer trial stage but more likely to be adopted by individual because the customer finds the product harmless and support their activity process. There is also problem in technology literacy, lack of infrastructure and accessibility that challenges the complexity attributes [31]. To reduce the dimensionality of large data sets by using mathematical projection, in which some argues on the modification of factors that relevant to adoption, this study examines 30-dimensional data set derived from 5 variables. Once the optimal feature set is obtained, PCA selected the most significant features to be classified as the pattern later [35]. The researchers have distributed the questionnaires to 125 students in International Islamic University Malaysia. It has two sections consist of user demographic namely age, sex, device, internet use, IT skill, online media and interest topic, while the other focused on factors influence in diffusion of innovation [19] namely relative advantage (10 items), compatibility (5 items), complexity (5 items), triability (5 items) and observability (5 items). It has been used 7 likert scale agreement level with radio button to make ease respondents choosing the proper answer. The indicator used can be summarized as in relative advantage, this research focused on understanding (RA1), various information (RA2), eliminate doubt (RA3), different opinions (RA4), information validation (RA5), iman (RA6), ibadah (RA7), time (RA8), money (RA9) and prestige (RA10). Then, in compatibility concerned on habit (CB1), learning style (CB2), approach (CB3), environment (CB4) and facilities (CB5) while complexity related to difficulty (CP1), language (CP2), search (CP3), confusion (CP4) and learning issue (CP5). Meanwhile, trialability consist of opportunity (TR1), satisfactory (TR2), multiple medium (TR3), cost (TR4) and availability (TR5) while in observability consisted of the mass people (OB1), experience (OB2), educational (OB3), relatives (OB4) and behavior (OB5). The most appropriate technique available in multivariate data analysis is exploratory factor analysis (EFA), in which has objective to determine the latent structure of a particular dataset by discovering common factors or variance. To approximate EFA, this study uses principal component analysis (PCA) to explain as much of the variance of the observed variables as possible using few composite variables or component, in which does not discriminate between common variance and unique variance [24]. However, when only a few variables are being analysed or the communality is low, PCA and EFA analytic procedures produce divergent results [25]. In addition, Gorsuch concluded that the differences in result decrease as the score reliability of the measured variables increases while Thompson [26] argued that the practical difference between PCA and EFA is often negligible in term of interpretation.

3.2 Principal Component Analysis

PCA is a dimension-reduction tool, which often be used to simplify a large set into a small of variables that still contains most of the previous information by changing number of variables that correlated with the number of variables that have no correlated. For PCA, the correlation analysis is always equal to 1.0 [18]. It is also aims to summarize the information in a correlation matrix by adding the values on the diagonal [24] while preserving as much variability as possible or finding new variables that are linear functions in the original dataset that successively maximize the variance [27]. The left-most section of the table 1 shows the variance explained by the initial solution. Only

eight factors in the initial solution have eigenvalues greater than 1. Together, they account for almost 70% of the variability in the original variables, while 1 component have 26% variance. This suggests that eight latent influences are associated with service usage but there remains room for a lot of unexplained variation. Meanwhile, communalities point out the number of variances in each variable to be considered. Its initial is the approximate variance in each variable described by all components or factors. The table 1 showed that communalities based on variable in the order are all high (more than 0.5) represent the extracted components appoint good variables. The variables can be plotted as points in the component space using their loadings as coordinates [14, 15].

Table 1. Initial Eigen Values

Comp.	Total	% of Variance	Cumulative %
1	7.610	25.368	25.368
2	2.902	9.674	35.043
3	2.455	8.182	43.225
4	2.158	7.195	50.420
5	1.767	5.891	56.310
6	1.577	5.256	61.566
7	1.349	4.497	66.064
8	1.176	3.919	69.982
9	.928	3.092	73.075
10	.858	2.860	75.935
11	.806	2.686	78.621
12	.701	2.337	80.957
13	.595	1.984	82.941
14	.537	1.789	84.730
15	.491	1.637	86.367
16	.476	1.588	87.955
17	.436	1.453	89.408
18	.420	1.401	90.809
19	.374	1.245	92.054
20	.337	1.124	93.178
21	.321	1.071	94.248
22	.311	1.036	95.284
23	.248	.825	96.109
24	.230	.768	96.877
25	.214	.713	97.590
26	.177	.590	98.180
27	.167	.556	98.735
28	.150	.500	99.236
29	.123	.409	99.645
30	.106	.355	100.000

Each principal component has one dimension with mid-point has value 0, in which the positive and negative sign indicated the direction that a given variable is going on a single dimension vector, in which less than -0.3 to more than 0.3 as the rule of thumb for sufficient contribution to the component. Based on the table 2, it showed that component 1 has the most contribution from 30 items compare to the other 7 components, with 17 of them have high contribution over the value of 0.5, while only 3 (three) items have no sufficient contribution at all (CP1, CP2 and TR4). Meanwhile component 2 has 12 (twelve) items that is indicated sufficient contribution with 3 (three) of them has value more than 0.5 (RA6, CP1 and CP2). Furthermore, component 3 has 10 (ten) items give sufficient contribution with CP3-5 has high value over the others. On the other hand, component 4 has 8 (eight) items for sufficient contribution with 3 (three) of them have high value (OB3-5). In addition, component 5 has 6 (six) sufficient items with TR4-5 have high value and component 6 has also 6 (six) with no item got more than value of 0.5. Component 7 also has no high value with 5 (five) items for sufficient contribution and lastly, component 8 has only 3 (three) sufficient item with TR2 has high value over them. Based on the result, it can be generated the other three possible new factors derived from relative advantages and trialability. If component 1 as relative advantages, it can be broken down into two factors, in which the others can be defined as perceived benefits. Meanwhile, 3 items of trialability show sufficient contribution for component 2, but complexity has 4 (four) items, with 2 of them has high value. On the other hand, there are also 3 (three) sufficient items in the component 5 and 2 (two) items in component 8. Thus, trialability can be changed into different factors such as government incentive or organizational culture. For the other factors, due to exploratory nature, it can be derived from literature review such as religious indicator or technological literacy.

Table 2. Component Matrix (8 Component Extracted)

	1	2	3	4	5	6	7	8
RA1	.58	.11	-.10	-.24	-.08	-.09	.25	-.20
RA2	.38	-.04	-.04	-.18	-.36	.25	.46	-.22
RA3	.53	.45	-.23	-.41	.02	.09	.17	-.05
RA4	.35	.40	-.2	-.38	.00	.38	.10	-.12
RA5	.46	.48	-.18	-.42	.04	.18	.05	.11
RA6	.38	.53	-.24	.00	.02	.00	-.41	-.12
RA7	.54	.48	-.34	.07	.06	.03	-.34	.01
RA8	.56	.21	.03	.05	.37	-.41	.39	-.03
RA9	.55	.14	.04	.03	.3	-.49	.33	-.00
RA10	.4	.25	-.03	.21	.18	-.47	-.12	.02
CB1	.61	.12	.36	-.1	-.26	-.21	-.05	.05
CB2	.65	-.01	.41	-.16	-.25	-.16	-.12	.21
CB3	.64	.10	.34	-.16	-.3	-.03	-.2	.23
CB4	.57	-.16	.47	-.16	-.21	-.06	-.23	.11
CB5	.62	-.18	.44	-.12	-.04	-.08	-.07	-.25

CP1	-.15	.49	.06	.40	-.14	.18	.23	.29
CP2	-.17	.65	.04	.24	.15	.08	.00	.36
CP3	-.34	.47	.59	.05	.26	.09	.03	-.00
CP4	-.40	.39	.62	.05	.07	.07	.11	-.23
CP5	-.53	.26	.58	.14	.1	.16	.16	.02
TR1	.56	-.36	.1	.09	.08	.21	.1	.41
TR2	.47	-.31	-.15	-.06	.17	.26	.26	.54
TR3	.45	-.35	.16	-.17	.44	.06	-.11	.04
TR4	.27	-.17	.34	-.2	.58	.41	-.08	-.15
TR5	.51	-.16	-.12	.2	.53	.16	-.21	-.12
OB1	.61	-.02	.19	.23	-.19	.37	.02	-.21
OB2	.68	.06	.00	.34	.05	.1	-.06	.02
OB3	.55	-.13	-.08	.53	.06	.1	.11	-.18
OB4	.58	-.13	-.02	.53	-.18	-.04	.26	-.11
OB5	.45	.13	-.04	.57	-.21	.23	-.17	-.09

Table 3. Component Correlated Matrix

Comp.	Total	% of Variance	Cumulative %
1	7.610	25.368	25.368
2	2.902	9.674	35.043
3	2.455	8.182	43.225
4	2.158	7.195	50.420
5	1.767	5.891	56.310
6	1.577	5.256	61.566
7	1.349	4.497	66.064
8	1.176	3.919	69.982

PCA is a technique that requires a large sample size to reduce data measures into a few key variables, in which there is several interrelated variables. In this case, there are 8 variables added to the data set, which show the component results to see the dimensions of the data. For example, if two components extracted and representing 68% of the total variation, it is meant that the dimensions in the component space are responsible for 68% of the variation. Unlike factor analysis (FA), PCA is not common to determine underlying variables so the loading is not interpreted as factor value. If raw data is used, the procedure will create an original correlation or covariance matrix as determined by the user. If the first matrix is used, the variables are standardized and the total variance will be equal to the number of variables used in the analysis because each standardized variable has a variance equal to 1. If the covariance matrix is used, the variable will remain in the original metric. For sample size of 50 sample in PCA can be defined as very bad cases, 100 for bad, 200 for fair, 300 for good, 500 is very good and 1000 or more is excellent. As a rule of thumb, a minimum of 10 observations per variable are required to avoid computational difficulties [36]. From table II, it showed in the first column that component 1, 5, 6, 7 and 8 has explained 93% of variance.

4 Conclusion

As the online da'wah become the innovation trend in this following decade, this study found out that user characteristics can be divided into six or eight components, which is translated into means of engagement in the online da'wah. By using IBM SPSS, it explained the identified components consist of modified factors with the others could be based on perceived benefits, organizational culture, religious indicator or other aspects such as accessibility, availability and flexibility. A projection of measure correlation reveals number of useful distinctions between student perception about online media and interpersonal motivation to convey Islamic message to fulfill the responsibility. Many types of learning in the preaching context especially the capacity, computer skill and attention required ongoing attempt and sustainable effort. In the meantime, individual value and choice can improve the use of technology and minimize the distraction or even conflict. Before conducting PCA, the survey data should pass several assumptions such as multiple variables that measured at the continuous level, linear relationship between all variables, sampling adequacy and suitable for data reduction [14, 15]. There are several rules of thumbs for sampling adequacy such as 150 of minimum cases or 5-10 cases per variable, which this study have less amount of recommended total number of samples. Arguably, this study has objective to perform exploration to DOI theory at initial stage, so the sampling number at above 100 as minimum boundary.

References

1. F. Adam, M.M. Anuar, A.H. Ali. The use of blog as a medium of Islamic da'wah in Malaysia. *Int. Journal of Sustainable Human Development*. 2014; Vol. 2(2): 74-80.
2. H. Campbell. Spiritualising the Internet: uncovering discourses and narratives of religious Internet usage. *Heidelberg Journal of Religions on the Internet*. 2005; Vol. 1(1): 1-26.
3. N. Rusli. Spritualising new media: the use of social media for da'wah purposes within Indonesian Muslim scholars. *Jurnal Komunikasi Islam*. 2013; Vol. 3(1): 1-21.
4. A.M. Al-Shami. Uses and Effects of Religious Programs among Yemeni Audiences. *Jurnal Komunikasi Islam*. 2013; Vol. 3(2): 179-225.
5. A.F. Bakti and I. Lecomte. The integration of dakwah in journalism: peace journalism. *Jurnal Komunikasi Islam*. 2013; Vol. 5(1): 185-203.
6. I.M. Mutunga. Assesing the best practices in media and communication training. *Jurnal Komunikasi Islam*. 2013; Vol. 5(1): 1-26.
7. A. Abdul Rahman, N.H. Hashim and H. Mustafa. Muslims in cyberspace: exploring factors influencing online religious engagements in Malaysia. *Media Asia*. 2015; Vol. 42 (1-2).
8. Arifuddin. Dakwah through Internet: Challenges and opportunities for Islamic preachers in Indonesia. *Ar-Raniry: Int. Journal of Islamic Studies*. 2016; Vol. 3(1): 161-188.
9. J. Meuleman. Dakwah, competition for authority and development. *Bijdragen tot de Taal-, Land- en Volkenkunde (BKI)*. 2011; Vol. 167 (2-3): 236-269.
10. B.M. Nasir, F.M. Sham, S.R. Tibek, I. Mkohtar, M.F. Asha'ari, N.M.T Abdullah. Quality in the practical training of da'wah: the experience of department of da'wah and leadership studies. *The Online Journal of Quality in Higher Education*. 2015; Vol. 2(1): 27-36.

11. M. Mahadi. A case study of religious engagement online: how Malaysian Muslim students access Islamic information. Thesis. Rochester Institute of Technology; April 2013.
12. M.D. Dixon. Creating effective student engagement in online courses: what do students find engaging? *Journal of the Scholarship of Teaching and Learning*. 2010; Vol. 10(2): 1-13.
13. M. Lubis, M. Kartiwi and S. Zuhuda. Privacy and personal data protection in electronic voting: factors and measures. *Telkomnika*. 2017; Vol. 15(1): 512-521.
14. H. Abdi, L.J. Williams. Principal Component Analysis. *WIRE Computational Statistics* vol 2, July/August (2010).
15. R. Sahak, W. Mansor, K.Y. Lee and A. Zabidi. Performance of principal component analysis and orthogonal least square and optimized feature set in classifying asphyxiated infant cry using support vector machine. *Indonesian Journal of Electrical Engineering and Computer Science*, 9(1), 139-145 (2018).
16. P. Hui and S. Buchegger. Groupthink and peer pressure: social influence in online social network group. *IEEE ASNAM* 2009.
17. M. Lubis and M. Kartiwi. Privacy and trust in the Islamic perspective: implication of the digital age. *IEEE ICT4M* 2013.
18. IBM. Using factor analysis for structure detection. IBM Knowledge Center. December 2017.
19. E. Rogers. Diffusion of Innovation. 5th edition, In: an integrated approach to communication theory and research. Simon and Schuster, 2003. ISBN 9780743258234.
20. A. Aris and F. Hassan. Da'wah through instagram among female Muslim celebrities in Malaysia. *Journal of Islamic Social Sciences and Humanities*. 2016; Vol. 9: 49-62.
21. A. Shan-A-Alahi and M.N. Huda. Role of information technology on preaching Islam (da'wah). *American Int. Journal of Research in Humanities, Arts and Social Sciences*. 2016; Vol. 17(1): 1-5.
22. H.F. Siagian, Mustari and F. Ahmad. The position of da'wah messages and ethics in Malaysian and Indonesian television programs. *Malaysian Journal of Communication*. 2016; Vol. 32(2): 749-769.
23. Laerd. Principal Component Analysis (PCA) using SPSS Statistics. Lund Research Ltd (2013).
24. U. Lorenzo-Seva. How to report the percentage of explained common variance in exploratory factor analysis. Technical Report. Department of Psychology, Universitat Rovira I Virgili, Tarragona: 2013.
25. R.L. Gorsuch. Factor analysis (2nd Ed.). 1983. Hillsdale, NJ: Erlbaum.
26. B. Thompson. A partial test distribution for cosines among factors across samples. In B. Thompson (Ed.), *Advances in social science methodology* (Vol. 2, pp 81097), 1992. Greenwich, CT: JAI Press.
27. I.T. Jolliffe and J. Cadima. Principal component analysis: a review and recent developments. *Philosophical Transactions Royal Society. A* 374: 20150202. 2016.
28. M.O. Gongora. Study of the factors influencing the adoption of social media in SMEs. Master Thesis. Universitat Politècnica De Catalunya. 2016.
29. A.S. Kesselheim. Using market-exclusivity incentives to promote pharmaceutical innovation. *The New England Journal of Medicine*. 363:1855-1862, 2010.
30. R. Alghamdi, A. Nguyen and V. Jones. A study of influential factors in the adoption and diffusion of B2C e-Commerce. *International J. of Adv. Comp. Science and Applications*, 4(1), 2013, 89-94.
31. X. Zhang, P. Yu, J. Yan and T.A.M. Spil. Using diffusion of innovation theory to understand the factors impacting patient acceptance and use of consumer e-health innovations: a case study in a primary care clinic. *BMC Health Service Research* 15:71 (2015).

32. M. Talukder. Factors affecting the adoption of technological innovation by individual employees: an Australian study. *Procedia Social and Behavioral Sciences* 40: 52-57 (2012).
33. T.J. Ntemana and W. Olatokun. Analyzing the influence of diffusion of innovation attributes on lecturers' attitudes toward information and communication technologies. *An Interdisciplinary Journal on Humans in ICT Environments*, 8(2): 179-197 (2012).
34. P. Moorthi and Mathivananr. A study about SOA based agriculture management data framework. *Indonesian Journal of Electrical Engineering and Computer Science*, 9(1), 39-42 (2018).
35. Idre. Principal Component Analysis | SPSS Annotated Output. Retrieved at January 2019 from: https://stats.idre.ucla.edu/spss/output/principal_components/
36. A.L. Comrey and H.B. Lee. *A First Course in Factor Analysis*. Hillsdale, NJ: Lawrence Erlbaum, 2nd Edition, 1992.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

