

**JOURNAL OF INFORMATION
SYSTEM AND TECHNOLOGY
MANAGEMENT (JISTM)**www.jistm.com**A CONTEXT WIDE REVIEW ON BUILDING TRUST THROUGH
DIGITAL APPROACHES**Khew Kai Ren^{1*}, Shamsulhadi Bandi², Norhazren Izatie Mohd³

¹ Faculty of Built Environment & Surveying, Universiti Teknologi Malaysia, Malaysia
Email: krkhew2@graduate.utm.my

² Faculty of Built Environment & Surveying, Universiti Teknologi Malaysia, Malaysia
Email: shamsulhadi@utm.my

³ Faculty of Built Environment & Surveying, Universiti Teknologi Malaysia, Malaysia
Email: norhazren@utm.my

* Corresponding Author

Article Info:**Article history:**

Received date: 01.10.2021

Revised date: 01.11.2021

Accepted date: 20.11.2021

Published date: 01.12.2021

To cite this document:

Khew, K. R., Bandi, S., & Mohd, N. I. (2021). A Context Wide Review On Building Trust Through Digital Approaches. *Journal of Information System and Technology Management*, 6 (24), 125-130.

DOI: 10.35631/JISTM.624013**This work is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)****Abstract:**

Common to the construction industry, distinct parties of different backgrounds and disciplines were assembled to complete a project. Despite being unfamiliar and sharing little in common except the project's goal, this ad-hoc syndicate was expected to effectively communicate the expectation of the project's stakeholders. While it was possible for project parties to get along and gradually form an effective relationship, contrasting interests and values were the norms, which resulted in conflicting attitudes and behaviour. Among the most critical constituents of a successful relationship, trust was identified as the fundamental building block to allay conflict or cushioning its impacts it. Through advancements in project management thinking in recent times were able to offer pragmatic solutions to relationship issues in construction, it appeared that digital transformation was not widely inculcated in the approaches. Against this backdrop, this paper aimed to gain insightful disclosure on digital development that promotes and accelerates trust-building in different contexts. This is methodically carried out by identifying and reviewing 100 pieces of relevant literature from the Scopus database, followed by deductive content analysis to observe the interplay between digital development and trust in a wider context. The analyses revealed two types of digital approaches having bright prospects for infusion in construction which are Gamification and Virtual Reality (VR). The outcome from this analysis provides the much-needed departing point for humanizing digital development in construction and signifies a paradigm shift in dealing with trust issues in construction.

Keywords:

Construction, Relationship, Trust, Gamification, VR

Introduction

The temporal nature of construction industry characterized by one-off project locations, one-off project teams and one-off design solutions led to a very fragmented communication (Ali, 2010). Besides, the existence of cultural differences and geographically constraints worsened the communication effectiveness, which in turn increased the degree of difficulty to reach a common ground. As a result, the decisions within the team are made on an ad-hoc basis rather than a consensus. Consequently, this triggered an adversarial relationship and poor trust among the construction parties (Matilda Bernehjält and Carlbom, 2020). To certain extent, establishing an adequate level of trust among the construction parties is still considered far reaching in the current project environment.

While it is possible for project parties to get along and gradually form an effective relationship, contrasting interests and values are the norms, which results in conflicting attitudes and behaviour. Among the most critical constituents of a successful relationship, trust is identified as the fundamental building block to allay conflict or cushioning the impacts of it. Though advancements in project management thinking in recent times have been able to offer pragmatic solutions to relationship issues in construction, it appears that digital transformation is not widely inculcated in the approaches. Accordingly, this invokes a question of whether digital development can improve trust, taking heed from application in various other sectors and the prospects it can offer for construction. Against the backdrop, this paper aims to gain insightful disclosure on digital development that promotes and accelerates trust-building in different contexts.

Methodology

This study explored the literature to establish the extent from which a research needs could be conceptualized. It starts with a preliminary literature review to explore and identify the significance of the topic and the state of the art. Once the preliminary review is done, relevant articles, journals, and reports were gathered with the aim to gain insightful disclosure on digital development that promotes and accelerates trust-building in different contexts. This is methodically carried out by identifying and reviewing 100 pieces of relevant literature from the Scopus database, followed by deductive content analysis to observe the interplay between digital development and trust in a wider context. This paper reports the outcome from the systematic review carried out using the VOS viewer as the tool to establish the literature state of the art.

Research Trend and Map

Figure 1 shows the research trend map in the field of construction based on publication published in Scopus database. The figure is generated with the keywords related to “construction industry” and “trust”. Generally, the higher the frequency of keywords, the larger the size of node. In contrast, the lower the frequency of keywords, the smaller the node. It is note-worthy that ‘game’ does exist within the margin of construction research field. The small node transforms an information that the particular research field of ‘game’ is considered

immature when it comes to the context of construction industry. Hence, this necessitates studies to be conducted on that area.

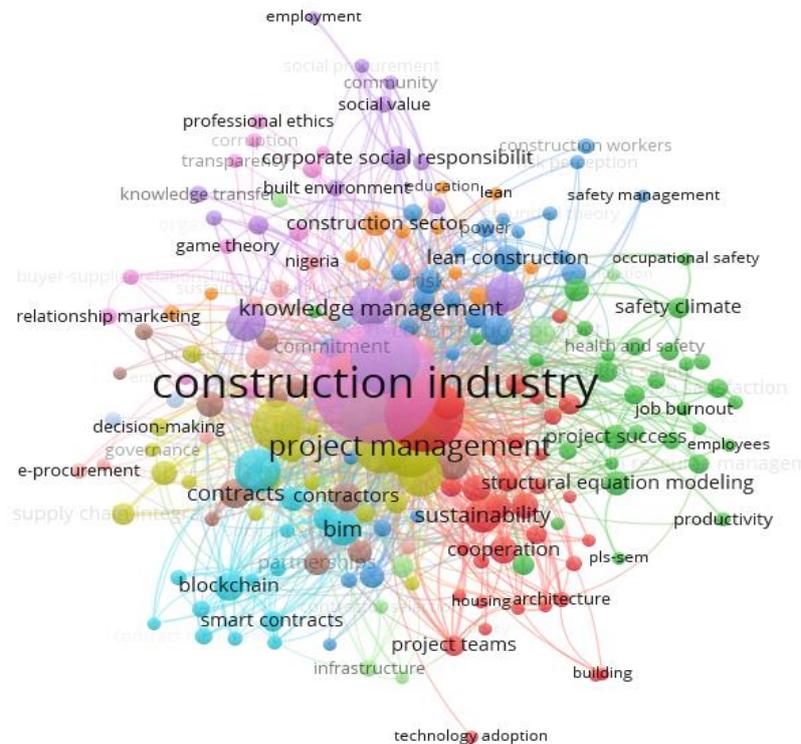


Figure 1: Research Trend Map

Source: Vosviewer

Results and Discussion

In line with the Fourth Industrial Revolution (IR 4.0), the impact of digital revolution has opened a new paradigm for the various industries to ensure that technology and people are connected (Alaloul et al., 2020). Digital revolution led to a technological breakthrough which transformed the different existing fields in the direction of further digitally developed trades (Alaloul et al., 2018). Against this backdrop, technological advancement created the possibility to increase the utilization of digital approaches to promote trust in the most varied environment and contexts and gamification was one of the examples. There appeared a fair amount of literature which covers the digital approaches that promote trust in different contexts. Table 1 shows other past researchers relevant to the topics and the aspects covered.

Table 1: Past Studies On Digital Approaches That Promotes Trust

Context	Digital Approaches	Finding	Author
Social	Gamification	Gamification proved to increase social engagement and creating cultural conditions which	Coronado Escobar and Vasquez Urriago (2014); Gordan and Jessica (2014); Ramadan (2018);

		impact positively on trust of citizens, society and community groups.	Hassan and Hamari (2019); Bouchillon and Stewart (2020); Maltseva et al. (2019)
Online	Gamification	Gamification has a significant positive impact on generating online trust	David and Toke (2018); Fathian et al. (2019); Gunta et al. (2018)
Fashion	Virtual Reality (VR)	VR technology can offer vivid interactions with product and people which will generate and improve customer's trust	Papadopoulou (2006); Xue et al. (2020)
Marketing	Gamification	Gamified review systems have positive impacts in building trust with customers	Shi et al. (2017); Marianna et al. (2019)
Healthcare	Gamification	Gamification can promote engagement outcomes such as positive relationships and trust between physicians and patients	Liu et al. (2020)
Learning	Gamification	The results indicate that group members were more motivated to achieve the group's goals and they tended to help and trust each other more in the gamified group	Uz Bilgin and Gul (2019)
Human Resource Management	Gamification	Gamified HRM system refers to the feedback received often create reciprocal behavior and foster trust which is one of the reciprocal benefits	Silic et al. (2020)

Source: As indicated

Shown in Table 1, David and Toke (2018) reported that the use of game design elements such as points and badges on eBay's website have a significant positive impact on generating online trust. To explain, sellers receive points and badges when the delivery was made on time and have a chance to collect points based on customers' reviews. The points and badges obtained by the sellers can represent the degree of their benevolence, integrity and competence which reflect their trustworthiness as sellers. Other study by Xue et al. (2020) considered that Virtual Reality (VR) technology offered vivid interactions with product and people which improved and enhanced consumers' trust in fashion retail while a study by Marianna et al. (2019) pointed out that gamified review systems had positive impacts in building trust between the hosts and guests in marketing. Last but not least, from the healthcare perspective, Liu et al. (2020)

considered that the use of game design element such as badges can improve trust between physicians and patients. For instance, the number of badges granted to a physician could reflect his or her expertise and contribution in the past which provide a basis for assessing his or her trustworthiness in terms of reliability and competence. Therefore, based on the findings, it appears that technologies able to offer a pragmatic approach in improving trust. Gamification is seen having a great potential to be leveraged into construction.

Conclusion

Based on the previous research reviewed, both gamification and Virtual Reality (VR) have been found to be used as trust-building approaches. Mohd et al. (2018) highlighted that both approaches served to provide a near real experience in a virtual environment in which gamification is much more affordable than VR. Therefore, gamification possess higher potential to make its entry, setting as a new interactive and affordable approach, being expected to influence the trust level in current construction environment.

Acknowledgement

The authors would like to express their appreciation for the support from the Geran Universiti Penyelidikan (GUP) QJ30000.2652.16J81 from Universiti Teknologi Malaysia and the Ministry of Higher Education under the Fundamental Research Grant Scheme (FRGS) (FRGS/1/2019/SS03/UTM/02/4)

References

- Alaloul, W. S., Liew, M. S., Zawawi, N. A. W. A. & Kennedy, I. B. 2020. Industrial Revolution 4.0 In The Construction Industry: Challenges And Opportunities For Stakeholders. *Ain Shams Engineering Journal*, 11, 225-230.
- Alaloul, W. S., Liew, M. S., Zawawi, N. A. W. A. & Mohammed, B. S. 2018. Industry Revolution Ir 4.0: Future Opportunities And Challenges In Construction Industry. *Matec Web Of Conferences*, 203, 02010.
- Ali, E. F. M. 2010. *Development Of An Integrated Construction Management System For Building Estimation*. Degree Of Master Of Science In Civil Engineering (Construction Management), University Of Baghdad.
- Bouchillon, B. C. & Stewart, P. A. 2020. Games-Based Trust: Role-Playing The Administrative Experience Of Immigrants. *New Media & Society*, 146144481990055.
- Coronado Escobar, J. E. & Vasquez Urriago, A. R. 2014. Gamification: An Effective Mechanism To Promote Civic Engagement And Generate Trust? , 514-515.
- David, E. H. & Toke, Z. 2018. Gamification: Gamified Element's Impact On Online Trust. 45.
- Fathian, M., Sharifi, H. & Solat, F. 2019. Investigating The Effect Of Gamification Mechanics On Customer Loyalty In Online Stores. *Journal Of Information Technology Management*, 11.
- Gordan, E. & Jessica, B.-P. 2014. Playful Civic Learning: Enabling Reflection And Lateral Trust In Game-Based Public Participation. *International Journal Of Communication*, 8, 759-789.
- Gunta, K., Sivaselvan. B & C, O. 2018. Gamification Paradigm For Webapps Design Framework. *2nd International Conference On Computer, Communication, And Signal Processing (Iccosp 2018)*.
- Hassan, L. & Hamari, J. 2019. Gamification Of E-Participation_A Literature Review. *Proceedings Of The 52nd Hawaii International Conference On System Sciences*, 3077-3086.

- Liu, J., Zhang, X., Meng, F. & Lai, K.-H. 2020. Deploying Gamification To Engage Physicians In An Online Health Community: An Operational Paradox. *International Journal Of Production Economics*, 228, 107847.
- Maltseva, K., Fieseler, C. & Trittin-Ulbrich, H. 2019. The Challenges Of Gamifying Csr Communication. *Corporate Communications: An International Journal*, 24, 44-62.
- Marianna, S., Martina, T., Maria, F. R., Laura, D. P. & Roberta, G. M. 2019. Gamification In Airbnb : Benefits And Risks. *E-Review Of Tourism Research (Ertr)*, 16.
- Matilda Bernehjält & Carlbom, I. 2020. *How Global And Virtual Teams Are Efficiently Managed By Project Managers - From A Construction Management Perspective*. Master Of Science, Stockholm, Sweden.
- Mohd, N. I., Kherun, N. A., Shamsulhadi, B. & Fuziah, I. 2018. Exploring Gamification Approach In Hazard Identification Training For Malaysian Construction Industry. *International Journal Of Built Environment And Sustainability*, 6, 51-57.
- Papadopoulou, P. 2006. Applying Virtual Reality For Trust-Building E-Commerce Environments. *Virtual Reality*, 11, 107-127.
- Ramadan, Z. 2018. The Gamification Of Trust: The Case Of China's "Social Credit". *Marketing Intelligence & Planning*, 36, 93-107.
- Shi, V. G., Baines, T., Baldwin, J., Ridgway, K., Petridis, P., Bigdeli, A. Z., Uren, V. & Andrews, D. 2017. Using Gamification To Transform The Adoption Of Servitization. *Industrial Marketing Management*, 63, 82-91.
- Silic, M., Marzi, G., Caputo, A. & Bal, P. M. 2020. The Effects Of A Gamified Human Resource Management System On Job Satisfaction And Engagement. *Human Resource Management Journal*, 30, 260-277.
- Uz Bilgin, C. & Gul, A. 2019. Investigating The Effectiveness Of Gamification On Group Cohesion, Attitude, And Academic Achievement In Collaborative Learning Environments. *Techtrends*, 64, 124-136.
- Xue, L., Parker, C. J. & Hart, C. 2020. How To Design Fashion Retail's Virtual Reality Platforms. *International Journal Of Retail & Distribution Management*, 48, 1057-1076.