

Impact Of Digital Transformation in Shaping the Characteristics of Entrepreneurial Network Structure and Operational Process in Traditional Small-Scale Service Enterprises: A Qualitative Analysis of The Cleaning Service Industry in China

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Abstract

This paper aims to the evaluation of the influence of digital transformation in shaping the operational process and characteristics of the entrepreneurial network structure of the traditional small-scale companies of the cleaning service industry in China by qualitative study. From previous literature, digital technologies were found to be a key factor for the traditional small-scale companies of the Chinese cleaning industry to gain competitive advantages. A significant positive influence can be seen in improving the operational efficiency. Besides that, previous literature indicated that a collaborative, entrepreneurial network could be developed through the adoption of advanced technologies. The study is performed through interviews among 10 interviewees associated with small-scale cleaning service enterprises of tier-1 cities in China. Themes are made according to the opinions of the respondents, and an analysis is performed. The study indicated that the adoption of technology is essential for maintaining communication, improving and quickening the operational process, and achieving customer loyalty. A large network can be created, and geographical barriers can be mitigated. However, the study also revealed that companies should not solely depend on technology for operational processes and making entrepreneurial networks. Focus should be given to the improvement of the traditional approaches with the adoption of technology. The combination of both innovation and tradition in business operations helps in gaining the utmost operational efficiency, and a wide, strong, and collaborative entrepreneurial network structure can be created through this.

Keywords: Digital Transformation, Cleaning Service Industry, Entrepreneurial Network Structure, Operational Efficiency, Performance

INTRODUCTION

Digital transformation has several unique features and accessibility, and implementation of digital technology is just not for improving internal operations, but it helps expand the internal dimension of the business. Small-scale enterprises play a pivotal role in economic and social growth providing jobs to the community (Lim, 2018). However, survival of small-scale enterprises in the contemporary world is extremely challenging as entrepreneur strive to develop competitive advantage against its competitors. With advancement of technologies, a significant change in the ideas, purchasing patterns and buying tendencies of the customers can be seen (Vančić et al. 2019). Traditional small-scale enterprises are forced to adopt digital technologies to ensure competitive advantages. Specifically, the incorporation of advanced technologies enables the small-scale enterprise maintain strong communication with its customers. In addition, the preferences, choices, and buying patterns of the customers can be understood better. Collaboration with the suppliers and other partners is maintained strategically, and in turn, helps in encouraging flawless business activities through maintaining a very strong business network among the stakeholders.

In the past few decades, China has proliferated, and the country has become the second-largest economy in the world. Besides such unprecedented growth, the company is also associated with experiencing a swift and rapid expansion of the service sector in the past few years (Liao, 2020). As an example, it can be marked that, it is projected that the home and laundry care market in China is expected to reach a revenue of US\$20.10 bn by the year 2023. The expected annual growth rate of this industry is nearly 3.5% from 2023 to 2028 (Statista, 2022). Therefore, the cleaning service sector is required to manage its business operations more

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strategically and systematically to provide optimum services to the customers. However, with the growth of the mentioned sector, it has become necessary to manage the business network simultaneously to ensure the continuous flow of internal operations more efficiently. Besides that, the success of a service-oriented industry depends on the degree of ensuring the satisfaction level of the customers. It is denoted from the previous research that companies are seeking opportunities based on digital transformation for the better management of customer satisfaction and better value generation of customers. It can be seen that digitalization is incorporated to identify the targeted customers more effectively. The incorporation of advanced technology is also opportunistic to accelerate innovation and maintain interaction with stakeholders (Berman, 2012). Considering these, it can be assumed that, lack of technological advancement is problematic for the small-scale enterprises to manage communication with the customers. Issues can also be faced in the future in coordinating with the suppliers and other business stakeholders. This factor forced the small-scale enterprises of the Chinese cleaning service industry to adopt advanced technology in business operations. However, the implementation of digital technologies in the business operations of small-scale service enterprises results in changes in entrepreneurial network structure, and this may create issues for enterprises when dealing with such a new structure. The rationale of this study is that it is focused on identifying the impact of digital transformation in changing and reshaping the business network structure of small-scale companies in the cleaning service industry in China.

The key focus of this study is to evaluate the impact of digital transformation in shaping the characteristics of entrepreneurial network structure and operational process in the traditional small-scale service enterprises of China. The objectives are as follows:

To evaluate the need for the small-scale enterprises of the cleaning service industry of China to adopt digital transformation in the business operation

To identify the key challenges and advantages of the small-scale enterprises of the cleaning service industry of China after the digital transformation of business operation

To find out the characteristic changes in the entrepreneurial network structure and operational process of the traditional small-scale companies of the cleaning service industry in China due to digital transformation

The research questions are as follows:

What is the need for the small-scale enterprises of the cleaning service industry of China to adopt digital transformation in the business operation?

What are the key challenges and advantages of the small-scale enterprises of the cleaning service industry in China after the digital transformation of business operations?

What are the characteristic changes in the entrepreneurial network structure and operational process of the traditional small-scale companies of the cleaning service industry in China due to digital transformation?

This study can provide a brief insight into the issues and benefits of incorporating digital technologies in the operational activities of small traditional enterprises of the cleaning service industry in China. Since it has become necessary for small and traditional enterprises to introduce digital technologies in business operations, it is important to analyze the characteristics of the change in the managing structure of a business network. This will help ensure further strategies for better management of business.

LITERATURE REVIEW

Digital transformation and performance of SMEs

Digital transformation is significantly important for ensuring better performance and growth of SMEs. In a previous study, it was demonstrated that individual digital capability is considerably beneficial in growth and innovation. Among the sample of 2,156,360 million samples, the findings of the study demonstrated that improving internal digital capability is significantly essential to providing quick response to the rapid changes in the market (Scuotto et al. 2021). Hence, it has become significantly necessary for companies to transform their business with advanced technologies to achieve competitive advantages. Businesses and society are

facing rapid and radical changes due to the pervasiveness of advanced technologies. The use of digital technology has a direct link with the innovation capacity of the companies. In the case of the service industry, it is considerably important to provide services according to the needs and preferences of the customers. On this note, digital transformation is significantly essential to understanding the requirements, preferences, and ideas of the customers more perfectly based on the data on their purchasing patterns and buying tendencies. In addition, technology is also essential for maintaining communication with the customers. A contradictory point of view was found in another study, and it was mentioned that digital transformation in the era of Industry 4.0 is complex and intensive with resources. External support and readiness of the company with operational technology is significantly essential for the digital transformation. Hence, proper guidelines are vital for medium and small companies to ensure success in the transition to Industry 4.0 (Albukhitan, 2020). The findings of this literature are important for this study, as the mentioned findings indicate the need to adopt digital transformation in SMEs, and the required changes are also demonstrated.

Characteristic changes in the entrepreneurial network structure and operational process of traditional scale company as a result of digital transformation

A strong entrepreneurial network structure is observed as highly important for gaining valuable social capital resources, and a strong network structure enhances growth possibilities for small-scale companies. In the existing literature, it is mentioned that an entrepreneurial network typically refers to the interconnection between different entrepreneurs both, informal and formal. This interconnection is considerably beneficial for managing the performance of the business of both small and new firms. Different typologies are there, which are essential for comparing the categories of the entrepreneurs, as well as their motivation and business objectives (Löfsten et al. 2022). In the case of traditional small-scale companies, it is quite difficult to create a large network among the entrepreneurs, as the connectivity and communication between the management of the companies are lower. In addition, chances of conflicts and lack of understanding the process of knowledge sharing can become difficult in this context. However, for traditional organizations, the lack of advanced technologies is problematic in terms of dealing with an uncertain environment. For small-scale companies, technology can be a source of competitive advantage ensuring its survival against bigger rivals (Lim, 2019). A study was done among 192 hospitality firms to evaluate the impact of a dynamic environment on maintaining the relationship between the performance of the organization and organizational performance. In this study, business networking ties and social networking sites were the two different variables. The findings of this study marked that an uncertain and dynamic environment is significantly problematic for companies to maintain continuous growth and performance. On this note, strong business and social networks are effective in dealing with such scenarios systematically. In this study, it is also mentioned that innovation is the key factor for the development and growth of small-scale companies (Tajeddini et al. 2020). Therefore, the adoption of digital technology helps small-scale organizations to enlarge their social capital resources by increasing the number of networks. Maintaining connections with business ties has become easier, and the entrepreneurial orientation of small-scale companies has changed to incorporate more innovation to ensure better customer satisfaction. The ideas of the mentioned studies are relevant to this study, as the findings help in getting ideas on the changes and the characteristics of entrepreneurial networks of small-scale companies after adopting advanced technologies.

Challenges of Traditional small scale service Enterprises to adopt digital transformation in Business

The adoption of digital technologies is found to be considerably advantageous for improving the performance and productivity of small-scale companies. However, a previous study argues that the adoption of advanced technologies creates challenges for small-scale traditional companies. On this note, the resources of SMEs related to IT, the skill sets of the employees and digital strategies are demonstrated as the major challenges for small-scale companies to incorporate advanced technologies in business operations (Eller et al. 2020). For the successful digital transformation of the business operation, it is considerably important for employees to have a good skill set. Resources are also required for strategic changes in operational processes.

The findings of the mentioned study are relevant for this research, as they give an idea of the tentative challenges that may be faced by small-scale companies in the cleaning service industry to adopt digital transformation.

Upon reviewing the previous literature, the influence of digital transformation in ensuring the business growth and development of SMEs is available in the previous literature, but no literature was found regarding the characteristic changes of entrepreneurial network structure and operational process among the scale service enterprises of the cleaning industry of China as the influence of digital transformation. Hence, this can be considered as the main gap of the previous literature.

Technology Acceptance Model (TAM)

TAM is used in different research fields to investigate the acceptance of technology among customers. The main concern of the TAM model is to understand and evaluate the perceived ease of use of technology and the perceived usefulness of the technology (Rafique et al. 2020). In this research, the TAM model was adopted considering the external factors based on three different reasons. First of all, it helps in identifying the perspectives of the managers and employees of small-scale companies in adopting digital transformation. The ways through which advanced technologies manipulate the entrepreneurial network structure are directed here. Thirdly, external factors that are induced towards the network structure can be understood in this context. Hence, the application of the TAM model has the potential to understand the usefulness of modern technology in enhancing the business activities of small organizations in the cleaning service industry of China.

Conceptual Framework

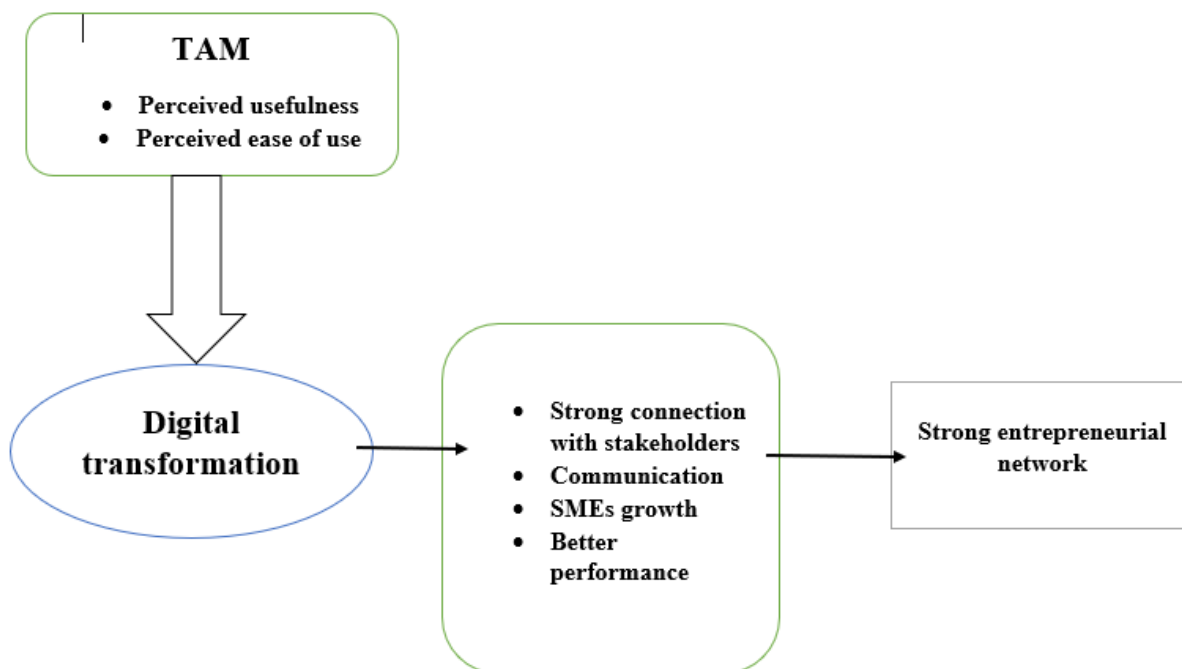


Figure 1: Conceptual framework

(Source: Self-developed)

METHODOLOGY

Research Methods

The wide assumptions on the evaluation and interpretation of the data set is usually carried out based on the application of the approach of research. Considering the type of the problem of a research, the approach of research is usually determined. For the context of the investigation of research, the two different types of approaches include the quantitative type of method and the qualitative method (Mehrad & Zangeneh, 2019). Due to the predominance of the qualitative data, this research is directed towards the qualitative method. In the specific form, it can be indicated that this research adopts an inductive type of approach. Based on the pattern of the data set, exploring the hunches, making the comparison between the findings, and finding out the key themes, the data set can be evaluated with the application of the mentioned types of approach (O'Kane et al. 2021). Furthermore, specific themes are made according to the observation, and evaluation is done accordingly.

Selecting a suitable design is essential for research to assure the trustworthiness and validity of the data set. Before commencing the collection process of the data set, it is essential to select the design of the data. It helps in validly achieving the objective of research (Asenahabi, 2019). It is beneficial for this research to adopt an exploratory design for further progression. An exploratory approach to research can be applied to those researches, which are not explored extensively in the existing literature. It can be seen that studies regarding the impact of digital transformation on the characteristics of entrepreneurial networks and the operational process of the cleaning industry are very few. Hence, exploratory design is the most suitable design for this research.

Collection Method of Data

The process of collecting data is of two different types, including the primary type of data collection method and the secondary data collection process. This research has applied both the primary and secondary types of data collection processes. Primary qualitative data is collected based on the interview method, and a telephonic interview is performed. After obtaining consent from the interviewees, the call is recorded, and an interview transcript is made. Five open-ended questions are developed, and according to the feasible time of the respondents, an interview is done. Purposive sampling techniques are followed to select the participants. The people who have more than 3 years of experience in the small-scale companies of cleaning service industry of tier-1 cities in China are selected only. In addition, secondary data is collected from scholarly articles and journals to compare the insights of the previous articles with the current study.

Thematic analysis is performed in this research, and themes are made according to the findings of the interview. The insights of the respondents are also used in terms of making themes, and discussion is done accordingly. This process of data analysis is found as effective for comparing the findings from the interviews and the findings of the previous articles. Hence, the most relevant insights can be drawn from this process of analyzing data.

Ethical Consideration

Consent is taken from the respondents, and their privacy is maintained throughout the research. Sensitive questions are not asked to the respondents, and all the opinions of the respondents are considered with optimum respect. Moreover, regulations for plagiarism are followed. Acknowledgment is given to the writers of the articles and journals that are used in this research.

DATA ANALYSIS AND RESEARCH FINDINGS

Information of Participants

In this research, 10 participants participated in the interview, and all were from the small-scale cleaning service industry in China. The companies from where the participants are selected consist of less than 50 employees, and tier-1 cities of China are the operating areas of the companies. Among the selected 10

participants, 5 were female and 5 were male. Therefore, participants were selected without any kind of bias. Moreover, experienced participants were chosen to get more valuable insights. The average industry experience of the selected participants was 5.5 years, and the average age was 33 years. 3 participants were owners of the business. Besides that, 4 employees and 3 managers participated in the interview. Therefore, in this study, respondents from diverse positions were selected, and this factor is beneficial for gathering different points of view.

Thematic Analysis

Need For the Adoption of Digital Technologies

A revolutionary change can be seen in the traditional small-scale companies of the cleaning service industry in China with the adoption of digital technologies. The landscape of internal operation of the mentioned industry has changed. A diverse point of view of the participants is found in the interview. However, one of the common factors was that the adoption of digital technologies in the mentioned industry is crucial in terms of ensuring competitive advantages. Along with increasing convenience, it helps in improving the performance and productivity of the mentioned sector.

Most of the participants indicated that customers in contemporary times are more prone to experience user-friendly operations. On this note, mobile applications have become a very popular way of making digital transitions, as they are very easy to use. One of the participants stated, "Our mobile application has changed our image among the customers. Now we can interact and communicate with the customers very easily and rapidly. This factor is effective for ensuring the satisfaction level of the customers" (P2). Mobile applications are effective for maintaining continuous interaction with customers along with providing a seamless experience. Another participant mentioned, *"Through the mobile application, everything becomes easier for the customers, and continuous interaction with the customers is maintained. It helps us to improve the user experience of the customers"* (P5). From the viewpoint of the participants, it is clearly understood that mobile applications are effective in meeting the expectations of clients, and this, in turn, helps to ensure the reliability and trust of the customers in the companies.

In the case of the service industry, customer satisfaction is observed as the key concern in terms of ensuring success. Beyond operational efficiency, building a strong relationship with the customers is found as another important aspect of digital integration. A participant stated that *"Specific needs of the clients can be met effectively. Previously, it was problematic to understand the needs of the clients. Through the data-driven insights of the digital platforms, customized services can be provided, and it in turn creates a positive impact in the experience of the customers"* (P8). This idea demonstrated that, through digital integration, a strong connection with the clients is made, and a personalized experience can be provided.

However, incorporating digital transformation is quite challenging, especially for small-scale companies. A participant stated the concern that *"Huge resources are required for ensuring digital transformation. However, due to having multiple positive aspects, we must make a strategic plan for the successful implementation of digital transformation"* (P1). For small-scale companies, optimum skill sets and resources are one of the major concerns for digital transformation. It is a fact that technology implementation requires resources, which is difficult for small-scale companies. Another respondent indicated that *"Dealing with the advanced technology is difficult, as these are not in our comfort zone, but customers' preferences pushed us to adopt this. However, we can indeed practice innovation in our business operations more effectively through digital transformation"* (P9). These concerns of the respondents established that, despite having difficulties, it is necessary to adopt digital transformation to ensure innovation in services, achieve customer satisfaction, and improve the quality of service.

In summary, it can be stated that digital transformation in the cleaning and service industry of China is associated with incorporating a radical change in traditional practices. Despite having challenges, it has become significantly impactful in optimizing performance. It also indicates the flexibility of the industry to adopt change. Besides that, customer satisfaction and personalized service were other important factors for establishing a solid position in this industry in China, and it can be ensured through digital transformation. Hence, the need for digital transformation can be understood through this discussion.

Opportunity For Growth and Simplification of Business Operation

Increasing the efficiency of business operations is another major reason for the cleaning service industry of China behind the incorporation of digital technologies. Participants stated that completing the daily task has become much easier due to the implementation of advanced technology. On this note, proper scheduling is observed as a key benefit for companies.

Meeting the deadline, monitoring, and controlling daily activities has become easier with the adoption of advanced technologies. A participant indicated that “Adoption of advanced technologies helps us monitor and track daily activities systematically” (P3). Considering the point of view of the participants it can be indicated that digital transformation is significantly beneficial and effective for maintaining the proper schedule of internal activities. Another participant confidently stated, “*Technological advancement helps us in meeting the deadline of the task. Time management has become easier for us, and we can manage our service and delivery on time*” (P6). Through efficient time management, multiple activities of the cleaning industry can be tackled strategically, and it helps to provide better service to the customers. Satisfaction of the customers can be ensured through providing time-to-time service. Maintaining the satisfaction level of the customers has a positive influence in providing growth opportunities.

Real-time feedback and effective communication processes are another two influential aspects in the adoption of advanced technologies in the cleaning and service industry of China. These factors also help to ensure business growth. A participant assertively mentioned that “digital communication tools are beneficial to communicate and coordinate easily with the internal team members. Hence, chances of misunderstandings, conflicts are reduced” (P7). Therefore, internal team management issues such as misunderstandings and conflicts between managers and employees can be tackled systematically. Another respondent mentioned that “Feedback from the customers can be gathered very rapidly and quickly due to the digital transformation, and we are capable of playing a proactive role in providing the best service to the customers” (P10). It can be inferred from this opinion that a shift is seen in the process of taking post-service feedback. This factor is impactful in terms of carrying out continuous improvement. In addition, quick modification, and resolving the queries of the customers can be done very rapidly through the digitization process. Therefore, an enhancement in the service quality of the cleaning service industry can be ensured by getting access to the rapid feedback of the customers.

Real-time customer feedback is also influential in creating a very strong relationship with the customers. One of the interviewees said that “involvement of the customers is increased, as customers can demonstrate their concerns and needs prominently. It helps in improving our services” (P4). Hence, the adoption of advanced technology is needed for ease and simplification of operational activities, which supports the industry in providing better customer service.

In summary, it can be stated that the simplification of the operational process helps the cleaning industry of China to manage its activities more efficiently. Better support to the customers can be provided. Communication reduces the chances of miscommunication, and understanding the problems and needs of the customers helps the industry to improve the standard of its offerings. These factors ultimately create opportunities for the cleaning industry to ensure growth and competitive advantages.

Alteration of Entrepreneurial Network Structure

The emergence of advanced technologies and digitalization in China's cleaning service industry has created revolutionary changes in the entrepreneurial network structure of traditional small-scale companies. Depending on the ideas and points of view of the respondents, it can be stated that the characteristics of maintaining collaboration with the stakeholders and other entrepreneurs have changed after the digital transformation. Personal recommendation and word of mouth were the popular way of creating networks previously. Digital transformation improves the entrepreneurial network structure towards a collaborative landscape.

The point of view of the participants indicated that digital transformation was effective for expanding the network beyond geographical boundaries. A participant specifically mentioned *“We are now not dependent on the local connections, as the entrepreneurs are interlinked with the social media groups and channels. This factor helps us in the process of knowledge sharing effectively, and practical decisions can be adopted more strategically”* (P9). This factor indicates that entrepreneurs are capable of making seamless connections without any barrier of geographic location. Another respondent stated, *“Communication in the virtual sphere helps us to understand the situation of the global market, and it also creates opportunities for us to expand our business in the future”*(P3). The notion of respondents supported the fact that chances of interacting with diverse people have increased, and it in turn impacts positively to create a larger and stronger entrepreneurial structure.

Some contradictory points of view were seen among some of the respondents, and the respondents were concerned about creating organic connections. On this note, a participant made a different viewpoint and stated that *“Face-to-face interaction is beneficial for building trust and organic connection. Therefore, we should balance between the dependency of digital communication and face-to-face conversation”*(P5). This viewpoint establishes that, despite the advantages of technology, personal communication can not be replaced. Another participant supported this idea and stated, *“Meeting a person helps me to understand the ideas and viewpoints of people more promptly. It is not possible to identify the attitude of an individual through online communication, and it increases the chance of miscommunication. However, I believe that communication through digital media is required in today’s busy and competitive market; we must balance between real-time and digital conversation”*(P8). These opinions establish that real-time conversation is more valuable to create strong connections between entrepreneurs. However, the cleaning industry of China should rely more on the balance between real-time and digital connection.

This theme creates a different image of the transition of the Chinese cleaning industry. It was found that digital technology is beneficial for expanding the entrepreneurial network structure, as connections can be increased without any constraints of geographic location. Digital transformation has become a key successive factor for ensuring collaboration. However, the participants' views also demonstrated that organic connection also matters. Despite a lot of potential for advanced technology, interpersonal relationships were seen as one of the core characteristics of entrepreneurial network structure.

Challenges In Adopting Digital Technologies

The digital shift has become predominant in the cleaning and service industry in contemporary times due to its extensive benefits. In terms of the adaptability of the technology, the industry faced a diverse range of obstacles in the adoption process. On this note, the lack of skill set of the employees and higher cost of investment are found as the main concerns of the participants.

The participants indicated that the investment cost of digital technologies is extensively higher, and this factor creates obstacles, especially for the small-scale companies to adopt digitalization. An interviewee said, *“We understood that digital transformation is extremely beneficial for us to increase our growth opportunity, but the problem is to initial investment while implementing a new mobile application or any other digital technologies”*(P9). Hence, the long-term advantages are suppressed with extensive expenses, and for small-scale companies, it is quite problematic to make huge investments initially. Another respondent stated was more concerned regarding the proper training of the employees to use advanced technologies. The respondent mentioned that *“Undoubtedly, adoption of advanced technology is revolutionary, but employees are not familiar with using these. Lack of skill set and knowledge are significantly problematic to manage the activities flawlessly”* (P10). In such context, another participant showed an assertive point of view and stated that *“Even though lack of knowledge is problematic, we must take initiative in increasing awareness and learning on the use of advanced technologies for getting the best result”*(P6). Therefore, the willingness of the participants demonstrated their commitment to adopting advanced technologies in the business operations of the cleaning industry.

The rapid changes in the landscape of the business environment were seen as another challenge for small-scale companies in the cleaning industry. However, a positive point of view among the participants was seen in the adoption of advanced technology. One of the participants stated, *“It is quite difficult to adapt rapidly to the quick transformation, but this is the perfect time to learn and improve ourselves”* (P3). This statement

of the participants indicated that the situation is considerably beneficial and important for small-scale companies to increase their flexibility and adaptability. In addition, the resilience of the companies can also be increased effectively as a result of this. Another interviewee emphasized the advantages of the rapidly changing scenario of the cleaning service industry in China. On this note, the interviewee mentioned that *“Small-scale companies are capable of incorporating advantageous policies more rapidly as compared to large-scale companies. Besides that, we can also enhance the skill sets of the employees to deal easily with the rapid changes of the market”* (P5). These points of view of the respondents support that, interviewees are very much encouraged to fight against the challenges of technology adoption in the cleaning and service industry of China. Digital transformation of business operations is also opportunistic for companies to increase their adaptability, flexibility, resilience, and agility. Hence, stakeholders of small-scale companies in the cleaning service industry are more likely to transform the threats into opportunities.

Balance Between Digital Transformation and Traditional Operation for Ensuring Customer Loyalty

The key success of the service industry relies on the satisfaction and loyalty of the customers. This theme indicates that it is important to maintain a careful balance in terms of providing the best service to the customers. The viewpoints and ideas of the respondents indicated that, to ensure the satisfaction and loyalty of the customers, an organic connection is necessary. One of the participants mentioned that *“although a lot of new possibilities open with the adoption of digital technology, we should not solely rely on it. Our focus must be given to the personalized face-to-face interaction with the customers for better understanding”* (P1). However, personalized service and individualized attention can be provided in a better way based on the traditional approach. Keeping this factor in consideration it can be stated that, personalized touch is significantly necessary for increasing the value of companies among the customers.

The participants of the research remarkably mentioned that innovation is essential in terms of ensuring the satisfaction of customers. It is also helpful to achieve trust and customer loyalty in today's competitive edge. The participants were more prone to indicate the benefits of using technology to improve traditional methods. On this note, a participant clearly stated that *“Technology supports the innovation, it is not that we should scavenge the traditional methods for the incorporation of technology”*(P6). Supporting this idea, another participant mentioned that, *“I can provide better service with the support of innovation, and it helps me to achieve loyalty of the customers”* (P9). The ideas of the participants support that, the cleaning service industry must go for the adoption of the technology, but the traditional method is also crucial simultaneously.

Moreover, the interviewees indicated that rather than fully digitalized, it is more effective for the cleaning service industry to maintain a balance between traditional and digital methods. An interviewee clearly said, *“Our clients are more encouraged to get human assistance for resolving any queries”* (P4). Another participant mentioned, *“For value generation among customers, understanding the behaviors and attitude of the customers, we always prefer online communication. We found that trust of the customers can be gained more through the offline meeting or interaction”* (P7). Such realizations of the respondents support the idea that, to ensure optimum loyalty from the respondents, the cleaning service industry of China should keep a balance between traditional and digitalized operational processes. Human interaction should not be replaced with digital communication.

DISCUSSION AND CONCLUSION

This chapter is focused on discussing thoroughly the findings of the research. The findings are aligned with the evaluation and findings of the previous literature. In the previous chapter, a wide range of ideas was gained on the impact, challenges, and opportunities of digital transformation in the business operations of small-scale companies in the cleaning and service industry of China. More comprehensive analysis is done here, and those linked with extant literature for meeting the aim of the current research.

The digital transformation reshapes the small-scale cleaning service industry of China

The findings of this study revealed that digital transformation is one of the major causes behind the changed landscape of the small-scale cleaning industry in China. The participants indicated numerous aspects of adopting advanced technologies in the business operations of the cleaning service industry. A previous study indicated that mobile applications are considerably important for improving the business network to achieve success in the entrepreneurial business process. This literature also revealed that long-term efficiency can also be achieved through this (Rakshit et al. 2021). Similar findings can be seen from the opinions of the interviewees. This study supports the fact that establishing a mobile application is considerably beneficial and necessary in terms of ensuring operational efficiency.

However, one of the major problems was seen as the lack of resources to adopt advanced technologies in the business operations of the mentioned industry. This finding is also similar to the findings of the existing literature. A study revealed that the two main hurdles for SMEs to adopt technologies are financial resources and human resources (Prause, 2019). However, this study also observed that the lack of skill set of the employees is one of the major limitations of the cleaning service industry in China. The encouragement of the stakeholders to adopt technologies and mitigate the challenges was also found to be similar to the previous literature. It was seen that the managers of SMEs are prone to adopt advanced technologies for improving operational efficiency and ease of use. The study revealed that the attitude of the leaders is mediated fully by the association between perceived benefits and the adoption of advanced technologies for ensuring sustainability (Yacob & Peter, 2022). The findings of the present study also revealed that technology adoption is considerably opportunistic for the growth of the cleaning service industry, and this factor encouraged the stakeholders to fight the obstacles of technology adoption.

It can be concluded that the landscape of the small-scale cleaning industry of China is changing with the acceptance of the technology. It is creating a positive influence on the growth of small-scale companies in this sector. However, in the TAM model, it was observed that perceived ease of use and perceived usefulness are the two main factors that influence the adoption of technology (Kemp et al. 2019). The findings of this study also revealed a similar thing and established that digital transformation has a positive influence on the growth and operational process in the cleaning service industry. It creates a pathway for the industry to achieve long-term success and competitive advantages.

A collaboration between tradition and innovation is the key success factor for a strong entrepreneurial network in the Cleaning service industry in China

In contemporary times, traditional small-scale companies are experiencing a wave of digital transformation, and it has become necessary to cope with this rapid change to ensure competitive advantages. However, the findings of the study revealed that a balance between tradition and innovation is necessary for achieving utmost success in this context. In a previous study, it was indicated that open innovation in traditional SMEs creates different characteristics than open innovation in large companies (Bertello et al. 2022). This study also revealed that small-scale companies are capable of quickly changing their operational process as compared to large-scale companies. Coping with the quickly changing environment is necessary for providing better support to the customers.

The adoption of digital technologies is demonstrated as efficient for creating a very strong structure of entrepreneurial networks without any barriers related to geographic location. Connections with diverse people are built, and this creates a positive impact in improving knowledge and creativity. The same findings were found in the existing literature that demonstrated that the adoption of advanced technologies is significantly effective in terms of boosting the structure of the entrepreneurial network. Nowadays, digital technologies have a significant impact on new ventures, and these are leveraging the potential of collaboration and collective intelligence in terms of robust entrepreneurial networks and initiatives. More stable communication, collaboration, and human networks can be created through technological advancement (Elia et al. 2020). Similar observations are found in this study, and it was found that collaboration, communication, and recognition are the key factors of the entrepreneurial network with the adoption of advanced technologies.

However, the present study also demonstrated a notion that innovation must be incorporated without changing traditional practices in terms of gaining optimum success. It was found that face-to-face conversation and organic connection with the other entrepreneurs are more helpful in creating a trustworthy relationship. In addition, the attitudes can be interpreted in a better way, and it, in turn, creates significant influence, creating a more robust network. In terms of supporting these findings, the idea of institutional theory can be applied. The mentioned theory states that entrepreneurs must conform to the existing institutions to gain legitimacy and endorsement from the audience (Eijdenberg et al. 2019). Hence, in conclusion, it can be justified that, entrepreneurs must maintain collaboration between the traditional and innovative approaches to create a powerful network for securing the utmost opportunity for growth.

Nexus between digital transformation and traditional approach is more opportunistic than challenging for the Chinese cleaning service industry to ensure customer loyalty

The positive influence of digital transformation in assuring the loyalty of the customers was one of the key findings of the present study. It is found that technology helps understand the preferences, choices, and needs of customers. In addition, continuous communication with the customers is also maintained with the help of advanced technologies. Most of the previous studies indicated that technology adoption, such as the use of social media platforms, plays a mediating role in improving the relationship with customers. It, in turn, consists of relevant influences to improve the satisfaction level and customer loyalty. The main reason behind this is that customer service can be improved based on maintaining a continuous connection with the customers (Ali Qalati et al. 2020). Another study mentioned that, despite the huge efficiency of digitalization in ensuring communication and interaction with customers, face-to-face interaction is believed to be more effective in this context (Nuseir & Elrefae, 2022). The key findings of the current study also supported this idea. The participants believed that, customers still like personalized and offline services for resolving their queries.

In conclusion, it can be stated that a digitalized approach needs to be adopted for quick services, continuous communication, interaction, and relationship building with the customers, but it is not suitable to be solely dependent on the digitalized approach. Both the digitalized and traditional approaches are beneficial to providing services to the customers, and it in turn help in gaining the loyalty of the customers in the small-scale companies of the cleaning service industry of China.

Implication, Limitation, and Future Scope of Research

The key findings of this study have practical applications in China's cleaning service industries to improve their operations through the adoption of advanced technologies. The ways of strengthening entrepreneurial network structure can be gained through this study. Moreover, in the modern days, companies of almost all industries are required to adopt advanced technology to gain competitive advantages. On this note, the insights of this study can be used by small-scale companies in another sector in terms of adopting digitalization to improve performance, customer experience, and operational efficiency.

This study has certain limitations, and a small sample size can be marked as one of its major limitations. Besides that, only the companies of tier-1 cities are included in this study. Moreover, due to time constraints, the point of view of the respondents was gathered over a certain period. The point of view can be changed in the future depending on the situation. Hence, this can be considered as another limitation of this study.

To mitigate the limitation, vast research can be done in the future with companies in tier-2 and tier-3 cities of China. The specific impact of the implementation of the technologies of Industry 4.0 including AI and blockchain can be done in the future. The long-term effect of these technologies can be evaluated in the future. Moreover, research can be done more widely to evaluate the importance of technology in improving interpersonal relationships with customers in the cleaning service industry of China.

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Impact Of Digital Transformation in Shaping the Characteristics of Entrepreneurial Network Structure and Operational Process in Traditional Small-Scale Service Enterprises: A Qualitative Analysis of The Cleaning Service Industry in China

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