

INNOVATION AND SOLUTIONS IN BUSINESS LOGISTICS: “CASE OF STUDY TORGHUNDI PORT- AFGHANISTAN”

Nasrullah SAKHIZADA, Vytautas Magnus University, Agricultural Academy, Faculty of Bioeconomy Development, email: Nasrullah.sakhizada@vdu.lt

Summary

Ports are the doors of a country they need to be controlled and managed and need to use upgraded administration and transportation systems, though they represent the country management system. Torghundi port is one of the main ports of Afghanistan but unfortunately, for a very long time, the system and transportation have been upgraded continuously. In this study, qualitative research has been carried out, as a result of this most of the participants were considered to use innovative solutions for current challenges, such as lack of capability, proficiency, old versions of the administrative system, and not being used an ICT system, as a result, to use innovations and solutions the first obstacle is not a capable infrastructure, the government need pave the way for innovation the rest will be handled by private sectors by replacing their old trucks and system to a new generation of trucks which are capable of tracking and using GPS, although all the problems wouldn't be solved but eventually it paves the way to a better future for this port.

Keywords: innovation and solutions, business logistics, port.

Introduction

Smart technology has been used and implemented in almost all aspects of nowadays life, so, in this article, we focus on solutions for smart technologies using in the transportation of Afghanistan's Torghundi Border which is located in the northern part of Herat province in Afghanistan. This article prepared to suggest new and innovative ways in order to create an ease and more accurate system with the help of smart technology for the transportation of Torghundi to prevent corruption, hijacking, and robbery along the way to the Herat city and vice versa and to the other cities of Afghanistan. Furthermore, dry port provides services for the handling and temporary storage of containers, general or bulk cargoes that enters or leaves the dry port by any mode of transport (Roles of dry ports ..., 2016). Besides, with the implementation of smart technology, the worries of logistics companies will be relieved, on other hand, it has socio-economic benefits and will satisfy both sides companies and the government. A study carried out in the Afghanistan road plan which is mentioned in that Afghanistan's roads "emerged as a serious problem that caused almost 800 fatalities in 2013", which shows Afghanistan's worst road traffic safety (Afghanistan transport ..., 2017). These early experiments and innovative solutions of smart traffic data collection and signal timing management systems show how smart transportation is being implemented right now. Future solutions could be even more ambitious. For example, as connected vehicles become more common, cities may be able to rely on information directly from cars to map and model the flow of traffic throughout the city. Traffic monitors could be integrated with other systems, providing another valuable data source for smart city management.

Research aim: To suggest possible innovative ways and solutions for using smart technologies in Torghundi port's transport system.

The following objectives have been set to achieve the aim: 1) to explore which kinds of system is already implemented in the transportation system; 2) to explore the best possible ways for using innovations and solutions.

Research object and methods

Research object: to assess and look for feasible ways to use innovative solutions in the Torghundi port transportation system.

The qualitative method has been done through research collaborators, and interviews administered to truck drivers, companies, employees, and Torghundi inhabitants. The method of research to explore the best innovative solutions in the business logistics field in Torghundi border. The research aims to find out the ways in which the innovations and solutions could be feasible to implement in the business logistics system. The research has been conducted using an online interviews in February 2023 in which a total of 4 people have been interviewed. The questions are related to these two parts: Torghundi system, Neediness for innovation and solutions of smart technology in the current logistics transportation system, Effect of these innovations.

The result of the interviews are based on end users, drivers, employees, and private sectors feedback and valid observations, while the respondents are those who are more in touch with their daily activities with this logistics system in Torghundi. These respondents are small but they could fulfil as much information as needed. The study area under study is the logistics field based on smart technology. The research used the following socio-demographic categories:

gender, current occupation, and age. Basic analysis of the data showed the following: among these respondents, there are no women, due to the traditional lifestyle women are not working outside just taking care of children and house stuff. And related to ages two of them are between 40-55 and one of them is 57 years old and the manager is 32 years old.

Research setting. Currently, three dry ports of eleven dry ports of Afghanistan are active with the following stations and volume of merchandise (Afghanistan Railway Authority, 2018). Active Dry Ports of Afghanistan: Torghundi Dry Port, Aqina Dry Port, Hairatan Dry Port. *Land border of Torghundi.* Torghundi is a border town in northern Herat province of Afghanistan. It is the first border crossing between Afghanistan and Turkmenistan while Aqina is the second one (located in Faryab province of Afghanistan). The town of serhetabat in Turkmenistan is located just a short drive from the border crossing. Torghundi is about 120 km from Herat city and, 130 km from Herat international airport, travel time by truck is about 5 hrs and by car is about 2 hours. The railroad was basically built in 1960 as a single track and was upgraded in 2017. Torghundi is the starting point of the Lapis Lazuli international transit route opened in 2018 linking Afghanistan to turkey via Turkmenistan, Azerbaijan, and Georgia (WFP Afghanistan, 2021).

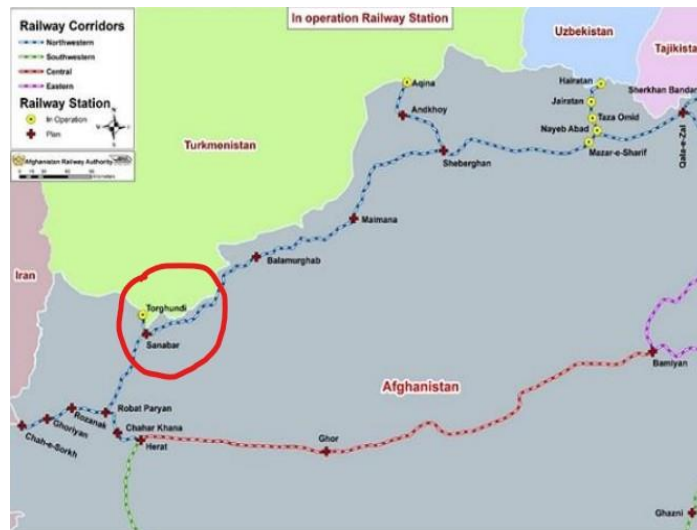


Figure 1. Active railway station and Torghundi port. Source: Afghanistan Railway Authority, 2018.

In above picture has been showed the three main dry ports of Afghanistan (Torghundi, Aqina, and Hairatan) and showed the importance of this Torghundi from economic and geopolitical aspects, the commodity volume imports from the Torghundi dry port as it showed nearly 68% of the commodity are foodstuffs (Kashifi, 2022), which are important for the country and Herat and the neighboring provinces. Regarding the logistics system, since the beginning of the establishment of this port, the infrastructure of the port and border is the same as in the beginning, and documenting procedure is still filed which means it is not connected to the finance ministry and everything is handled manually. The transportation system also has not been upgraded while still we can see the old Kamaz trucks which nowadays nowhere we can see these generations of trucks, although there are many new generations of trucks still, they are not traceable or connected to any network to be monitored. As a result, there are many problems such as: Vulnerable and corruption possibilities, break down during the trip to Herat city, that the truck driver can't contact to company and inform it, during this journey there could happen car hijacking or stealing of goods, due to not being able to contact the company or other responsible office the accident's fatalities increases. And, there are so various transit/transport challenges faced by many less-developed countries, especially in those of landlocked ones with limited trade, but higher costs and many delays (Haqiqi, 2016).

Incentives to implement innovative solutions to prevent above mentioned issues in the business logistics field:

- ✓ At first the government must implement modern Information and Communication Technology system.
- ✓ Equipping transportation with GPS to be tracked and monitored.
- ✓ In border crossing procedures there must be monitoring for speedy transparent and anti-corruption
- ✓ Preventing discrimination against some logistics transportation companies.
- ✓ Establishing an official financial and insurance system including effective clearance and transparency which is not available right now.

According to studies logistics and transportation are putting a step in Self-organising from digitization, automation and robotization. Until now, relatively few concrete examples are present of full-scale self-organizing logistic concepts. Digitization in logistics has not reached maturity level yet (Schroten et al., 2020). And implementing this innovation and solutions in Torghundi dry port will pave the way to Self-organising and automation and robotization.

Research results and discussion

The interview aimed to explore what are the main challenges for the business logistics field in Torghundi port and the advantages of implementing innovation and solutions in the business logistics field. The interviews were conducted

on a sample of 4 individuals of various ages, employment statuses and geographical origins. Respondents' ages varied from 32 years old two of them are 40-55 and one of them was 57 years old, regarding employment statuses, one of them identified himself as a worker, one of the inhabitants of the Torghundi area and two of them are truck drivers who live outside the Torghundi area.

Regarding the main challenges, 3 of the respondents considered it the procedures or two slow and vulnerable to corruption and transportation are not equipped to be monitored and tracked one of them considered only the route to Herat city is not secure and vulnerable. The interviews found that almost all these respondents considered the system's need to implement innovative solutions. And the advantages are for all: government income will increase; customers and traders would be satisfied and the inhabitant's life level could be better. Regarding the use of innovation, the 3 of them considered to be established ICT systems by the support of the government for procedures and transport monitoring clearance, while one of them considered that only the route need to be secured. In conclusion, the result found out that ages of 32 till 50 were considered that ICT system need to be implemented in Torghundi port and the new generation of truck must be replaced with old trucks. And one of due to not knowing much about smart technology he considered that route must be secure by human forces such as establishing some checkpoints on the route. Table 1 shows the categories from respondents data: The main challenges in Torghundi Port, Port, government, and private sectors capacity to conduct these innovations and solutions, Innovations and solutions feasibility from a financial perspective, The benefits of implementing innovations in the port, The possible ways to improve and make transparent the system and the route to Herat City.

The main reason for dissatisfaction could be poor systems and inadequate infrastructure. Respondents showed interest in smart technology to be used and infrastructure must be done, for sure for implementation of these innovation there are challenges such investment of huge amount of money, but it could be done by support of government in private logistics companies, for example: government needs to upgrade the infrastructure and private companies must replace their transportation according to the required system. Innovation and solutions need to be made in every aspects of the business logistics continuously due to the upgrading invention of new technologies for business inconvenient and new threats to national securities. Besides that Torghundi port is an important border of Afghanistan which connects Afghanistan to Europe, so, in this case, it worth to invest and upgrading the system in our business technology and security equipment so that the domestic and foreign investors get inspired to start business in Torghundi port. By using innovative solutions and use smart technologies in every aspects of Torghundi port we increase revenue and will encourage other businesses to get interested in this port.

Table 1. Analysis of the current situation and impact of the implementation of innovative solutions

Category	Original respondent insights
The main port challenges	-The administrative procedure is not as transparent as it needs to be (R1). -The way to Herat carrying goods is very vulnerable (R2).
Government and private sectors' capacity to conduct the innovations	The government always has the capacity to conduct this innovation as well as private sectors, although there would be some need for changes and professional staff to carry out this system and take of it from implementation maintenance aspects (R2).
Innovations and solutions feasibility from a financial perspective	-Of course, because this port is one of the main with high revenue Afghanistan's dry ports and can effort these innovations and solutions by both parties private companies and the government (R3).
The benefits of implementing innovations in the port	-The procedure will bring transparency and more accurate. -Other business companies would be able to invest in this port and importing goods will increase due this modern system. -The government could rely on this accurate data and the revenue will increase and other dry ports would get inspired and implement this system on other ports (R4).
The possible ways to improve and make transparent the system and the route	-Firstly, need to upgrade or implement a database network based on ICT to make it more transparent and trustworthy. -Secondly, the route to Herat City needs to install traffic surveillance and use trace technology in their transportation system (R2).

According to the literature and observations, there are a lot of challenges in Afghanistan's all dry ports and borders, while we focused on the main challenges of this port. Although in administrative procedures as the interviewee respondent answered there all many reasons but as an example: "When documents of their goods going be processed it would take much time and sometimes the documents get lost due no recorded in the computer and database and causes corruption and other parties' interference".

Regarding the capacity and potential of implementing innovations most of the employees are educated and knows how to work with computer and technologies by the way there would be a need for traineeship and short time courses which is not a big issue. Secondly from a financial aspect both parties "The government and private sectors" are able to effort and adapt to changes in their strategy. As result compare to expenses and costs the benefits and advantages is much more greater rather than investments and expenses.

Finally, according to the assessment and the participant's answers the implementation and conducting of innovations and solutions in this area from social and potential aspects is ready.

Conclusions

In this research, the main challenges of Torghundi port which causes corruption, delays, fatalities, and many more negative aspects, and has been proposed two main innovative solutions for business logistics in this area:

1. Upgrade and implement administrative innovative solutions based on smart technologies and stop reliability on old administrative systems. As result, implementing ICT and using a real-time network, and connecting this dry port to the main database and network besides this installing surveillance could help reduce most of our mentioned challenges.

2. Implementing smart technologies (GPS or any other sensors technologies which are feasible to implement) in Torghundi area logistics transportation systems in accordance with companies and government efforts.

As a result, the findings showed that innovation and solutions are urgent needs in administrative systems and transportation systems that it will bring much more benefits to our economy, and it will inspire and ignite new systems all around Afghanistan's ports.

References

1. Kashifi, M. T., Sarwari R. 2022. Overview of Afghanistan Transportation. Codification of water rights Afghanistan, Available at: https://www.researchgate.net/publication/363817233_Overview_of_Afghanistan_Transportation#fullTextFileContent
2. Afghanistan Railway Authority. 2018. Available at: https://www.carecprogram.org/uploads/2020-CAREC-Railway-Assessment_AFG_6th_2021-3-4_WEB.pdf
3. Roles of dry ports in economic corridors. 2016. Available at: https://www.unescap.org/sites/default/d8files/11.%20tforum11_c2_rasamit.pdf
4. Schroten, A., Van Grinsven, A., Tol, E., Leestemaker, L., Schackmann, P.P., Vonk-Noordegraaf, D., Van Meijeren, J., Kalisvaart, S. 2020. Research for TRAN Committee – The impact of emerging technologies on the transport system, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels. Available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652226/IPOL_STU\(2020\)652226_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652226/IPOL_STU(2020)652226_EN.pdf)
5. WFP Afghanistan. 2021. Afghanistan Land Border Crossing of Torghundi. Available at: <https://dlca.logcluster.org/display/public/DLCA/2.3.6+Afghanistan+Land+Border+Crossing+of+Torghundi>
6. Haqiqi, A.W. 2016. *Challenges in Transit/Transport the Case in Afghanistan*. Available at: https://www.unescap.org/sites/default/files/2.%20tforum_bs1_haqiqi.pdf
7. Baligh, M. 2017. Afghanistan Transport Sector Master Plan Update (2017—2036). *Asian Development Bank Publisher. Manila. Philippines*, No. 4.