JURNAL ECONOMINA e-ISSN: 2963-1181
Volume 5, Number 10, October 2026
Homepage: ejournal.45mataram.ac.id/index.php/economina

Fragile Economic Resilience among Women Online Motorcycle-Taxi Drivers in Medan, Indonesia: Income Uncertainty and Adaptation Strategies

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Article History
Received: 07-09-2026
Revised: 14-10-2026
Published: 30-10-2026

Keywords: ***economic resilience, female drivers, online motorcycle taxis, adaptation strategies, income uncertainty***

ABSTRACT

This study analyzes the economic resilience of female online motorcycle taxi drivers in meeting family needs in Medan City, focusing on income uncertainty, adaptation strategies, and the role of these strategies in building resilience. The study used a descriptive qualitative approach with purposive selection of informants. Data were collected through semi-structured interviews, non-participatory field observations, and documentation with 25 female motorcycle taxi drivers as primary informants and one representative from Gojek North Sumatra as a supporting informant. The analysis followed the interactive model of Miles et al. with the assistance of NVivo 15. The results showed that income uncertainty was related to order fluctuations and dependence on app-based work systems, limited work capacity and operational costs, and the pressure of family economic obligations. Informants responded to these conditions by managing income and adjusting consumption, organizing work time and patterns, diversifying income and utilizing available resources. These strategies helped families maintain basic functions, withstand economic and psychological pressures, restore control over economic decisions, and restructure livelihoods. This resilience is fragile because families still rely on daily income, have limited financial reserves, carry debt, and face health risks, accidents, and the burden of caring for their families. This research recommends strengthening employment protection, social security, secure financing, business development, and support for drivers' families and communities.

INTRODUCTION

Platform-based work has opened new employment opportunities in Indonesian cities, and online motorcycle-taxi (*ojek online*) driving is among the most visible. Entry is relatively easy, and drivers decide when to work. This growth takes place in a labour market that remains dominated by informal work: in August 2023, 59.11% of employed Indonesians worked in the

informal sector (Badan Pusat Statistik Indonesia, 2023). Platform work carries the flexibility of that sector together with its income uncertainty and economic risk. The Directorate General of Land Transportation records more than seven million registered online motorcycle-taxi driver-partners (Hikam, 2025), yet regional data are thin. The North Sumatra transport agency has said that it holds no data on two-wheeled online drivers because this mode is not regulated in the way four-wheeled special rental vehicles are (Dasril, 2023).

The national pattern is visible in Medan. In 2025 the city's labour force numbered 1,268,592 people, of whom 516,405 were women. Among these women, 474,263 were employed and 42,142 were openly unemployed, which gives a female labour force participation rate of 52.79% and a female open unemployment rate of 8.16% (Badan Pusat Statistik Kota Medan, 2026). The poverty rate was 7.25%, about 171.60 thousand people, against a poverty line of Rp721,547 per capita per month (Badan Pusat Statistik Kota Medan, 2025). In 2026, Gojek's management in northern Sumatra estimated that 7,000 to 8,000 drivers are active each day in Medan and that 300 to 400 of them, around 5%, are women (Gojek representative, interview, 2026). Women are a small minority of active drivers.

Studies in Indonesia show that women enter this work because of household economic need as well as preference. Avianty et al. (2021) emphasised that women drivers help sustain family economies, especially in crises such as the COVID-19 pandemic. Fanani and Hidayah (2021) reported that economic pressure, scarce formal jobs, and the need to provide for the family led women to drive, alongside time flexibility, the absence of fixed targets, income, and work networks. Herudiati (2023) found that housewives chose online driving because it let them combine domestic roles with an economic contribution. Flexibility has limits, however. Putri et al. (2026) showed that flexibility in gig work does not automatically give women economic autonomy or work-life balance, because social and cultural expectations and vulnerable working conditions shape their experience.

Income risk is the other side of flexibility. Al Hakim and Amirah (2025) identified unstable income, fluctuating orders, dependence on the app system, and rising operating costs as the main risks of online driving, and they described adaptive responses such as longer hours, service diversification, and cost control. Women meet these risks together with gendered ones. Kurniawan and Soenaryo (2019), Larasati et al. (2021), and Rasmuin et al. (2023) documented stigma, discrimination, and unequal standing relative to male drivers. Hisyam et al. (2025) described misogynistic treatment in public space, including verbal harassment, and Abigail and Damanik (2025) raised maternity rights and the double burden.

Further studies treat gender construction and equality (Kurniawan, 2024; Savira, 2024; Siti Arofah & Alam, 2019; Sundari & Harianto, 2024) and women's participation in the gig economy (Prasetyo et al., 2025). These topics are usually studied separately. Less attention has gone to how they connect: how income uncertainty leads women to adapt, and how adaptation shapes a household's ability to keep meeting its needs. Medan appears in earlier work (Putri et al., 2026), but that study centred on gendered experiences of flexibility and work-life balance. Women drivers and Medan have both been studied before. The contribution here is analytical:

we trace one process that links income uncertainty as pressure, adaptation as response, and economic resilience as the continuing ability to meet family needs.

We read resilience as a process. Holling (1973) separated resilience from stability: stability concerns a return to equilibrium, whereas resilience concerns a system's capacity to absorb disturbance without losing its main function. Walker et al. (2004) carried the idea into social-ecological systems, where resilience means absorbing disturbance and reorganising while retaining function, structure, identity, and feedbacks. Folke (2006) added learning and adjustment under uncertainty, and Norris et al. (2008) tied resilience to adaptive capacities that rest on economic and social resources. From these works we derive five analytical processes: maintaining function, absorbing pressure, adapting, recovering, and reorganising livelihoods. The synthesis is ours; no single author sets these five as indicators.

Adaptation strategies are treated as responses to pressure. Lazarus and Folkman (1984) describe coping as ongoing cognitive and behavioural effort to manage demands that strain a person's resources, and they distinguish problem-focused from emotion-focused responses. Bennett (1976) places adaptive action within social and cultural norms, and Adger (2000) links adaptive capacity to access to resources, social networks, and economic opportunity. Grotberg (1995) and Reivich and Shatté (2002) serve as supporting perspectives on external supports and personal capacities. Informality (Hart, 1973; Chen, 2016) and the platform economy (Srnicek, 2017) supply the structural context. Gender enters as a context that can sharpen these pressures and is not the main theory. Figure 1 summarises the framework.

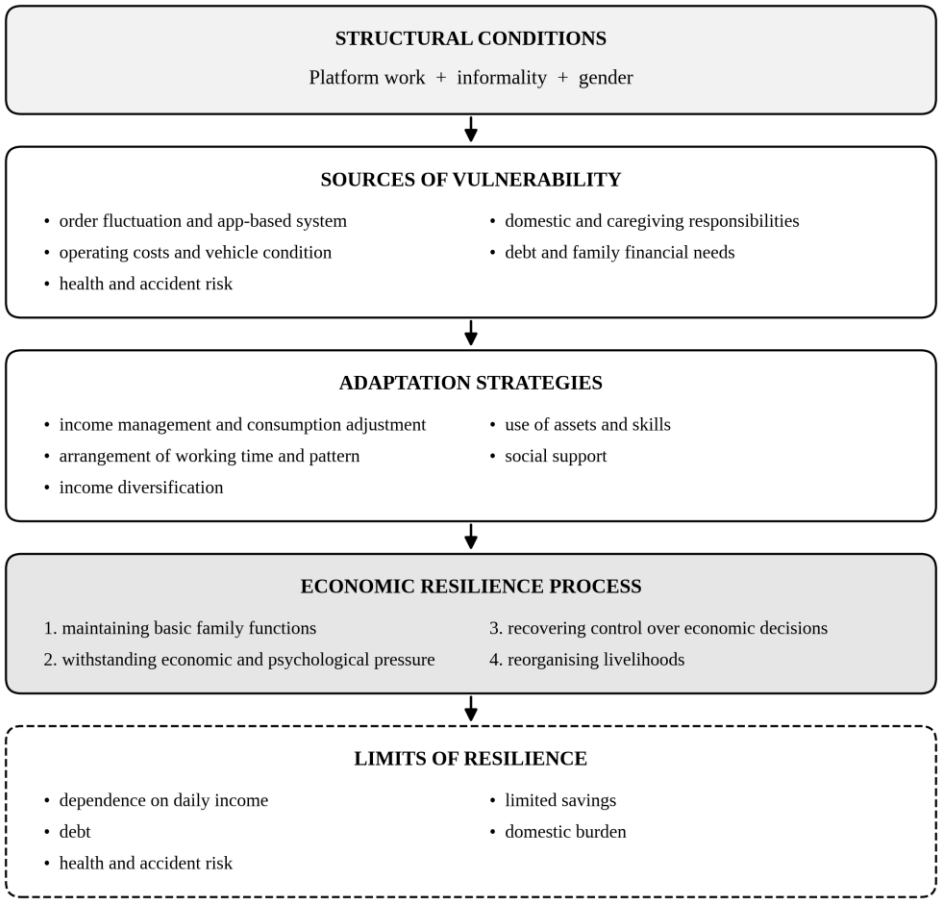


Figure 1. Analytical framework of the study (adapted from the authors' conceptual framework)

The study therefore addresses three questions: (1) what forms and dynamics income uncertainty takes among women online motorcycle-taxi drivers in Medan; (2) which adaptation strategies they develop in response; and (3) how those strategies shape the economic resilience of their families. By family needs we mean the basic needs that appear in informants' accounts, that is, food, housing, electricity, and education, together with economic obligations such as instalments and debts.

RESEARCH METHOD

This study used a descriptive qualitative design, which suits a problem that is contextual and concerns complex socio-economic processes (Creswell & Creswell, 2018). The design let us describe in detail how women drivers build and live economic resilience under uncertain income, work risks, and the pressure of multiple roles. It does not test hypotheses. The research was conducted in Medan, North Sumatra, a large city with a complex urban economy, a relatively high level of informal work, and limited access to stable formal jobs. Fieldwork took place in 2026, and the interview with the company representative was held on 9 July 2026.

We selected informants purposively according to their experience of income uncertainty, adaptation, and economic resilience. The main informants were women who drive two-wheeled Gojek vehicles in Medan and met four criteria: at least one year of active driving; online driving as a main or supplementary source of income; economic responsibility for themselves or family members; and willingness to speak openly about their economic experience. Unmarried women qualified when their earnings paid for education, housing, parents, or siblings, so the economic burden they carried guided selection, not marital status. One supporting informant, a Gojek representative responsible for public policy and government relations in northern Sumatra, supplied institutional information on the partnership system, incentives, protection, and safety training. We used this information to compare with drivers' accounts and to triangulate sources, and we did not use it to form the themes. We stopped adding main informants at 25 because of data saturation: themes began to repeat at the 23rd interview, and the 24th and 25th interviews added no new substantive category while confirming existing ones.

Table 1 summarises the main informants, who are identified by the codes IU-01 to IU-25 (IU stands for *informan utama*, main informant). Their ages ranged from 22 to 58. Twenty treated online driving as their main occupation and five as a supplementary one.

Table 1. Characteristics of the main informants (n = 25)

Characteristic	**Summary**
Age	22 to 58 years
Marital status	Married (12); unmarried (7); widowed (4); divorced (2)
Dependants	Own children, spouse, grandchildren, parents, siblings, or the informant alone
Role of online driving	Main occupation (20); supplementary occupation (5)
Driving tenure	1 to 5 years
Reported daily income	Rp0 to Rp200,000 (informants' own ranges)
Reported monthly income	Rp750,000 to Rp5,000,000 (informants' own ranges)
Main uses of income	Food, housing, electricity, education, health, fuel, instalments and debt payments

Source: Interview data, 2026.

Data collection combined semi-structured interviews, non-participant field observation, and documentation. The interview guide for drivers held 15 core questions on economic conditions, income fluctuation, work patterns, expenditure management, support received, work obstacles, and the meaning of economic survival. Follow-up questions were developed from each informant's answers. A separate guide covered the company's view of the work system, incentives, protection, and support for women drivers. Documentation drew on official statistics, reports and news on online driving, and earlier studies. Interviews were conducted in Indonesian, including local colloquial speech, and transcribed verbatim. We translated the quotations reported here into English and kept informants' idiomatic expressions where they carry meaning.

We analysed the data with the interactive model of Miles et al. (2020): data condensation, data display, and conclusion drawing and verification. Transcripts were anonymised with the

codes above and imported into one NVivo 15 project, where each transcript was a file and each informant a case linked to attributes such as age, marital status, number of dependants, driving tenure, job status, and income. Coding was open and followed the meaning of statements, not keywords alone. We merged codes of similar meaning, split codes that were too broad, and organised them into parent and child codes. A fall in income, for example, was coded by cause. Six initial groups were integrated into three themes that follow the research questions. Statements from a single informant were retained when they illuminated an important vulnerability or strategy. NVivo organised and traced the data, while the interpretation of meaning, the formation of codes and themes, and the conclusions remained the researchers' work.

We supported credibility with source triangulation (drivers' accounts compared with the company representative's) and method triangulation (interviews, observation, and documentation). Member checking returned interpretations to informants for clarification or correction. We kept an audit trail of transcription, coding, category formation, and theme development in NVivo, discussed coding and interpretation with academic supervisors as peer debriefing, and documented each research stage so that conclusions can be traced to the data. Informants' identities are withheld in all reporting. The study does not claim statistical representativeness of all women drivers in Medan.

RESULTS AND DISCUSSION

The findings follow the three research questions. The women shared one condition, income that cannot be fixed in advance, but they differed in age, household composition, number of dependants, health, skills, and support. A student who drives to pay tuition, a widow supporting three children, and a woman over fifty who still pays instalments face different problems (IU-02, IU-03, IU-10), and those differences shaped the strategies each chose.

Forms and Dynamics of Income Uncertainty

Income uncertainty was the problem informants raised first. Money arrives only after an order is accepted and completed, so earnings differ between days of similar working time. Three forms emerged: order fluctuation and dependence on the app-based work system, limited work capacity and operating costs, and pressure from family financial obligations.

Order fluctuation and dependence on the app. Earnings followed the number of orders, trip distance, fare, and waiting time. IU-01 said, "Up and down like the waves at Belawan, Kak," and IU-03 said, "Stable? Out on the road it's like gambling. You can't predict it at all." Demand also followed the calendar. Near the end of the month, when customers spend less, informants worked longer for similar earnings: "When my account is 'cold', and especially at the end of the month when people cut back on snacks, even seventy thousand has me out of breath from circling the Ringroad" (IU-05). A "cold account" (*akun anyep*) is a day when the app is on and orders barely come, and informants responded by moving, restarting the app, or waiting longer, with no assurance of an order.

The company representative confirmed that flexibility in working time is real: "We do not force anyone to turn on the app at a certain time, run orders at a certain time, or turn the app off altogether. That is decided by the drivers themselves" (Gojek representative, interview, 9 July 2026). Drivers control when they work, but not how many orders arrive, how orders are distributed, what fares apply, or whether an incentive is reached. A driver can extend her hours to chase a bonus target, yet the extra income depends on meeting set conditions while the cost of working is paid in advance. These accounts match the descriptions of informal work by Hart (1973) and Chen (2016), in which earnings are not assured and protection is thin, and Srnicek (2017) explains why the platform matters, since order distribution, fares, and incentives run through its system. De Ruyter and Rachmawati (2020) and Prasetyo et al. (2025) likewise link platform flexibility with fluctuating income and vulnerability. For the women in Medan, flexibility lies in the decision of when to work, while the economic result stays subject to market demand and platform mechanisms.

Limited work capacity and operating costs. Health, age, education, family duties, safety, and vehicle condition decide how long a woman can work and which orders she accepts. IU-04, aged 55, said, "My income depends on my body's health. If my rheumatism flares up, or my back hurts, or I catch a cold, I can't stay out long." IU-09 limits trip distance so that she can return quickly when her parents need care. Safety also limits earnings. Some informants avoided night orders or trips to areas they considered deserted because of the risk of harassment and accidents, a pattern consistent with the gender-based risks in public space described by Hisyam et al. (2025). The motorbike is both the means of earning and a source of cost. IU-04 said, "Often the fuel is used up circling around and I bring home only thirty thousand," and that sum is not net income because data packages, food, and maintenance still have to be paid.

Family financial obligations. Income that changes daily meets expenses that stay almost fixed. Debt took many forms: vehicle instalments, online loans, paylater, loans from relatives, bank loans, and obligations left by a spouse. IU-03 carries debts left when her husband died five years ago while she supports three children, and her motorbike was once repossessed when instalments fell behind, so debt threatened the tool of work itself. IU-05 faces online loans and paylater: "Whatever I earn today, by tomorrow it has already moved to someone's virtual account." IU-10 pledged her house certificate to a bank and pays Rp3,000,000 a month: "I struggle alone to pay the bank instalment." Where a husband's income is irregular, as with IU-20, the woman's earnings act as a buffer for daily needs and the children's schooling.

These findings extend work that treats online driving as a source of family income (Avianty et al., 2021; Fanani & Hidayah, 2021; Herudiati, 2023; Siska & Pujianto, 2023). Here the income supports basic needs and financial obligations at once, so it works more as an economic buffer than as a secure source. Chen's (2016) account of informality fits the pattern: with little certainty and protection, a disruption passes quickly to the household. Uncertainty also builds over time, since a low-income day can reduce the fuel available the next day and arrears carry obligations into later weeks, so pressure accumulates and narrows the household's economic room.

Adaptation Strategies

Uncertain income led informants to keep adjusting how they earn and how they use what they earn. Adjustment aimed at stretching available money over the most urgent needs as well as at raising income. Choices differed by age, physical ability, number of dependants, skills, and resources: women who were still strong could extend hours, and those with physical limits relied more on thrift and on work they could do at home. Strategies also came in combinations, such as longer hours together with a side business. We grouped them into income management and consumption adjustment, arrangement of time and work pattern, and diversification of income and use of resources.

Income management and consumption adjustment. Informants could not budget around a fixed salary, so money was assigned to purposes as it arrived. IU-01 described herself as "the finance minister." Her daily earnings paid for daily needs, while her husband's pay, received every three months, was held back for known obligations: "My husband's three-monthly salary I hold purely for the children's school fees and the house rent." IU-03 used rubber bands: "What's tied with the red rubber band is strictly for fuel and the leasing payment; what isn't tied is for rice and side dishes." In the terms of Lazarus and Folkman (1984), this is a problem-focused response that uses the resources still available. When the amount of income could not be controlled, informants moved control to the way income is used.

When income fell short, informants cut spending that could be postponed. IU-09 said, "It's my and my husband's food money that I sacrifice. I never buy skincare any more. I mix water into the bath soap so it lasts longer." IU-07 involved her children in cutting back on snacks, so strategy belonged to the household as well as to the individual woman. Thrift has limits, because food, medicine, education, and operating costs cannot be cut without limit. Some informants then turned to relatives or loans: IU-06 borrowed from an elder sibling, IU-01 used credit at a neighbourhood stall, and IU-03 once took a daily loan to buy rice. The consequences differ by source. Help from relatives or stall credit leaves room in repayment, whereas online loans carry interest, penalties, and due dates that reduce later income. Keeping basic needs met in this way is an early form of resilience, although borrowing can sustain vulnerability. The finding extends Avianty et al. (2021), Fanani and Hidayah (2021), and Herudiati (2023) by showing that the contribution of women drivers lies in how income is allocated, protected, and adjusted when it changes, as well as in how much is earned.

Arrangement of time, work pattern, and decisions. Informants adjusted when, where, and what to work. IU-11 built her day around her children: "Usually in the morning I take care of the kids first, and start driving around nine. At midday I sometimes go home briefly to cook and check on the children, then I'm out again until about seven in the evening." When a child fell ill, IU-12 said, "I automatically cut my driving hours even though the household needs keep going." The company treats willingness to accept varied orders as a way to keep earnings up, since a two-wheel driver "has to be willing to accept every order, whether the fare is high or low and the trip long or short" (Gojek representative, interview, 9 July 2026). Informants weighed that logic against distance, safety, bodily condition, and family duties. IU-07 accepted

bulky loads when she needed money: “Even if I’m told to carry a mini fridge or a giant cardboard box on a motorbike, I just go for it.” The choice raises the chance of earning and the safety risk together. Others held back. IU-10 said, “I don’t have the strength to add working hours,” and moved her effort into work she could do at home. IU-25 set a modest target: “if I haven’t reached it, I try again tomorrow rather than push myself.”

In the framework of Lazarus and Folkman (1984), these decisions show appraisal of the situation and resources before a response is chosen. Declining night orders or loads judged risky protects the ability to keep working over a longer period, because an accident or an assault can stop work and add to the family’s burden. Putri and Arsi (2023) likewise link women’s work decisions to the social conditions and risks they face in public space, and Herudiati (2023) names flexibility as a reason women choose this work. Our informants had to keep adjusting that flexibility to domestic duties.

Diversification of income and use of resources. Reliance on one income source is risky when orders cannot be predicted, so informants used skills, assets, networks, and spare time to earn more on a small scale. IU-01 makes ice lollies and small puddings: “At dawn I make the ice, and in the morning when I take the kids to school I leave it at the school canteen.” IU-07 wakes at four to bake and leaves cakes at three coffee stalls “to cover that day’s fuel money,” so the side activity protects the main one. IU-10 fries peanut *peyek* at night and delivers it to stalls, income suited to her physical limits because it needs no extra riding. Others sold skills: IU-02 offers typing and PowerPoint services, IU-03 gives massages, IU-09 takes make-up jobs, and IU-06 combines driving with an errand service. Relationships built through driving also became markets. IU-19 began buying breakfast and snacks for regular customers (“Not big, but decent”), and IU-08 works as a private courier outside the platform, an option when platform orders are unstable although off-platform trips lack the same recording and protection.

Informants did not leave online driving. They added activities to cushion fluctuation, which Adger (2000) would read as an adjustment of livelihood to keep the household functioning under stress and Norris et al. (2008) place within the capacities that skills and social resources provide. Resources also differ in durability. Food businesses and skill-based services can bring repeated income while skills and networks last, whereas selling clothes (IU-05) or other assets raises cash in an emergency but creates no continuing income. The company, for its part, described promotion aimed at expanding demand, including campaigns among students, so it widens opportunity inside the platform while the women widen their sources of livelihood outside it. This extends Fanani and Hidayah (2021), Herudiati (2023), Prasetyo et al. (2025), and Angelina et al. (2025), who describe women drivers as active agents of family provision: our informants assemble a livelihood from several resources at once.

From Adaptation to Economic Resilience

These strategies let families keep going on unstable income. They did not always raise income, but together they helped families keep basic needs met, pass through crises, and rebuild after disruption. We do not equate economic resilience with freedom from debt, adequate

savings, or a fixed income, since many informants still lived on daily earnings and stayed exposed to illness, vehicle breakdown, and falling orders. Resilience showed in what they could still do under those conditions: provide food, keep children in school, buy medicine, pay obligations in stages, and keep working. Coding produced three overlapping forms: maintaining basic family functions, withstanding economic and psychological pressure, and recovering and reorganising livelihoods.

Maintaining basic family functions. The earliest form of resilience was keeping the household running while income changed. IU-01 said, "My sweat today becomes my child's rice tonight," and that daily meals, fuel, and electricity tokens come "100% from my ojol earnings." IU-11 defined survival as "my kids still go to school, there's still food, and we don't have to keep adding debt." IU-09 supports two households: "From this two-wheeler alone, five mouths in two different houses have to be fed every day." For these women, success under uncertain income is judged by whether food is on the table, and a higher income or owned assets are not the measure.

These cases fit Holling's (1973) idea of resilience as absorbing disturbance without losing the main function, and Walker et al.'s (2004) account of keeping function under disruption. Informants' lives often did not return to what they had been before debt, bereavement, poor health, or a change in income. The function that persisted was the household's provision of food, schooling, health care, housing payments, and care for dependants. The finding extends Avianty et al. (2021), Herudiati (2023), and Siska and Pujianto (2023) by showing that the contribution of women drivers runs through allocating limited income to priority needs. The distinction from economic recovery matters: providing food or keeping a child in school shows that the family still functions and does not show economic security, because several informants still cut personal needs, used debt, or relied on daily income.

Withstanding economic and psychological pressure. Pressure included low income and also the death of a spouse, job loss, debt, illness, accidents, investment losses, and debt collection. Resilience appeared when informants kept taking economic action despite fear, shame, regret, and exhaustion. IU-01 recalled a time when she could not meet her child's needs: "At that time I cried seeing my child's milk tin empty, all I could give was rice water." Online driving did not remove the pressure, but it let her keep acting: "If it weren't for this green jacket, we would have gone back to the village to be farm labourers." Fellow drivers helped with urgent needs: "If someone's having a slow day and hasn't eaten, we chip in and buy a packet of rice." This help does not erase debt, but it supplies social resources when economic ones run short. Psychological strain was clearest for IU-05, who faces online-loan collection: "This isn't only helping the economy, it helps my mind so I don't go crazy." IU-07, who lost her savings in a failed investment, said, "I'm crawling up from the bottom of a ravine" and "Fighting regret is what drains my energy most." The regret remains, yet it does not stop the activities that provide for her family.

Reivich and Shatté (2002) help to read these accounts: informants regulate emotional responses, assess the source of problems, keep believing that things can improve, and use social

support. They still cry, feel afraid, ashamed, regretful, and tired, and their distress did not stop economic action. Economic and psychological pressure feed each other, since economic strain raises the psychological burden and psychological state affects decisions and work. The endurance we found shows resilience and does not show economic security.

Recovering control and reorganising livelihoods. Recovery was gradual and did not always restore the earlier situation. Signs of it included repaying debt, changing financial habits, returning to work after a disruption, adding income sources, and gaining more control over household economic decisions. IU-01 took six months to repay debts incurred when needs could not be met from income: "I slowly paid them off from my driving earnings, and it took six months to clear." IU-05 said, "Online ojek gave me a chance to fix my financial mistakes"; her debt is not cleared, but she has changed how she uses income. Control over decisions also shifted. IU-06 said, "Now, my family's economy, I steer it myself." IU-10 combined driving, *peyek* making, and negotiation with the bank. After an accident kept her off work for two months, restructured payments gave her room to return, and she kept her house and met part of the payment, although the loan is not paid off. IU-22 shows the gap between income and security: "Stronger in daily income, but not yet safe because there are not many savings."

These accounts reflect Folke's (2006) view of resilience as learning and reorganisation when earlier patterns no longer suffice. After pressure, some informants joined online driving with food businesses, skill-based services, or direct customers, and earlier pressure shaped later choices: IU-01 allocates income by time of receipt, IU-03 separates money by purpose, and IU-05 changed her consumption after debt pressure. Reorganisation did not lighten the burden. IU-07 bakes before dawn and IU-10 fries *peyek* at night after driving, so more income sources can cut rest and raise workload, and more control comes with more responsibility for income, debt, and family. This agrees with Kurniawan and Soenaryo (2019), Larasati et al. (2021), and Rasmuin et al. (2023) on women's expanded economic roles with continued double burdens. Our informants add a household-level picture of managing income, meeting obligations, bearing risk, and rebuilding livelihoods.

Sources and limits of resilience. Resilience came from personal capacity combined with resources in informants' surroundings. Skills, experience, responsibility, and the ability to decide were internal sources, and family, driver communities, customers, stalls, the company, and financial institutions widened options when app income was disrupted. Norris et al. (2008) tie resilience to this relation between individual capacity and environmental resources, and our data show it: skills in cooking, make-up, massage, typing, and delivery produced income only when customers and networks existed. Grotberg's (1995) I Have, I Am, and I Can help classify the sources: "I Have" appears as support from family, community, customers, stalls, and institutions; "I Am" as responsibility, courage, and hope; "I Can" as the ability to manage income, change work patterns, seek help, negotiate, and develop extra income. Access was unequal: IU-06 could borrow from an elder sibling, while IU-08 and IU-10, who carry large dependent burdens, had to draw more heavily on personal capacity.

The company's and regulators' roles also set the room for resilience. The representative separated flexibility from protection: flexibility is set by the driver, while work protection is set by the app company or the regulator, and protection goes first to drivers who are "more diligent and active" and take orders, those who "can get BPJS" (Gojek representative, interview, 9 July 2026). For women whose time shifts with health, education, safety, and caregiving, activity-based protection can be harder to reach. The interview identified no protection designed around women drivers' experience, and open partnership without gender restriction does not remove the differences in risk women face, such as travel safety, limits on the orders they can accept, and family duties.

The limits of resilience showed in dependence on daily income, small savings, debt, health and accident risks, and care burdens, and each strategy carried its own cost (Table 2). IU-19 said, "Stronger because I have my own income. But a sense of security isn't fully there because I don't have much reserve." IU-20 said she is stronger in managing the money that comes in, "but still vulnerable if my body is sick or the motorbike has problems."

Table 2. Adaptation strategies, their contribution to family resilience, and observed limits

Strategy	Contribution to family resilience	Observed limit or trade-off
Income allocation (separating money by purpose and time of receipt)	Protects priority needs (food, tuition, fuel, instalments) and keeps basic family functions running	Cannot raise the amount of income; leaves little room when income falls
Consumption cuts and use of home resources	Stretches income across urgent needs and avoids new obligations in the short term	Continued cuts limit food quality, personal needs, and other needs
Borrowing from relatives, stalls, cooperatives, or online lenders	Covers urgent needs that cannot be postponed	Online loans carry interest, penalties, and due dates; repayment ties up later income
Longer or more intense working hours	Raises the chance of earning when needs rise; helps repay arrears after disruption	Fatigue and safety risk; depends on physical condition
Selective order acceptance and reduced hours	Protects health, safety, study, and care duties; keeps the ability to continue working	Lowers earning opportunity in the short term
Side businesses and skill-based services	Adds recurring income and reduces dependence on app orders	Cuts rest time; depends on skills, customers, and networks
Sale of assets	Provides cash in an emergency	One-off; reduces resources; creates no continuing income
Support from family, fellow drivers, and customers	Supplies money, information, and food when income fails	Not shared equally; does not remove debt or income uncertainty

Source: Authors' analysis of interview data, 2026.

Taken together, the strategies work through three mechanisms. Income management and thrift keep the household's basic functions running, adjustments to work pattern, social support, and emotional management sustain the capacity to act, and diversification, changed financial habits, and reorganised livelihoods support recovery. The process differed across informants: some still focused on daily needs, while others had reduced debt or built extra income. The pattern is a fragile economic resilience. Informants can work, adjust consumption, find extra income, use support, and keep family needs met, yet many still depend on daily income, lack adequate savings, face debt and health risks, and carry domestic burdens. The capacity to survive has formed, and economic security has not fully arrived.

CONCLUSION AND RECOMMENDATIONS

This study examined income uncertainty, adaptation strategies, and the economic resilience of women online motorcycle-taxi drivers in Medan. Income uncertainty results from the interaction of platform conditions, limited work capacity, and family financial pressure. Strategies were combined, layered, and situational: income management and thrift protect short-term needs, changes in time and work pattern respond to rising needs and to disruption, and diversification and social support widen resources. Resilience is processual and dynamic, and it is fragile. It appears as keeping basic family needs met, withstanding economic and psychological pressure, recovering control, and reorganising livelihoods, and it leaves in place the dependence on daily income, limited savings, debt, health and accident risk, and domestic burden. The results support reading resilience as a process with limits and not as a condition free of vulnerability.

For practice, the findings point to three groups of action. First, government and platform companies should strengthen economic protection for women drivers through transparent fares, incentives, and order distribution, accessible complaint mechanisms, wider social security and accident protection, and safer financing, with attention to women who carry domestic and caregiving responsibilities. Second, women drivers can strengthen their adaptive capacity by recording income and expenditure, separating working capital from household needs, building an emergency fund as far as their means allow, and developing extra income from their skills. Borrowing should be judged by repayment capacity so that it does not add pressure on later income. Third, driver communities can support women's economic continuity by sharing domestic responsibilities, helping during income disruption or emergencies, and developing joint economic activities.

The study has limits. It draws on 25 women who drive for one platform in one city and were selected purposively, so the findings illuminate processes and do not describe how experiences are distributed among all women drivers in Medan. Income figures are informants' own estimates, the institutional view rests on one company representative, and a single period of fieldwork in 2026 cannot show how resilience changes over time. Future research could compare platforms and cities, follow households over time, test the relations identified here with quantitative data such as household budgets, and examine how activity-based protection affects women whose working time is interrupted by care duties.

ACKNOWLEDGEMENTS

The authors thank the women drivers who shared their experiences and the Gojek representative for North Sumatra who provided institutional information for this study.

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